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Farmers Awake! Your Industry in Danger if Eight-Hour Bill Becomes Law
See Article on Page 10, This Issue

CALIFORNIA CULTIVATOR AND RURAL CALIFORNIAN

An Illustrated Weekly Magazine, Devoted to the Rural Home and Ranch

LOS ANGELES July 2, 1914 SAN FRANCISCO

Tomatoes Ready for the Home Canner

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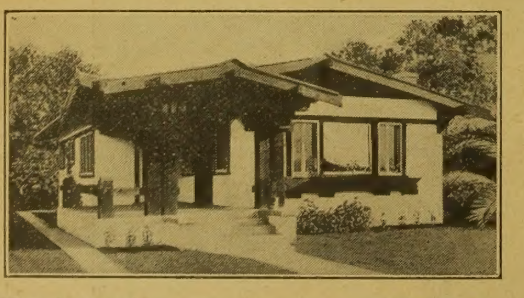

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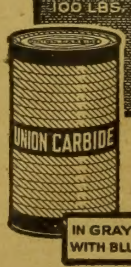

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California Cultivator
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Vol. XLIII No. 1 LOS ANGELES: THURSDAY, JULY 2, 1914 One Dollar Yearly

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Home Canning at Pine Crest Ranch

Address by Mrs. Stanley Roberts of Grass Valley Before State Fruit Growers Convention at Davis

At the recent state fruit growers' convention most intense interest was manifested in the addresses and demonstrations touching upon the disposal of fruit and vegetables in such a way as to bring the producer the greatest return. The home canning demonstrations conducted by Mr. William V. Cruess and Mr. Justo P. Zavalla were followed by interested listeners, but none created greater interest than Mrs. Roberts, who gave a description of her work with the home-made canner. Mrs. Roberts came to this country from Hawaii some years ago and for a few years has been on a little ranch in Grass Valley, Nevada County. One of the embarrassing problems which confront the producer is the disposal of fruit at satisfactory prices. Mrs. Roberts conceived the idea of canning the surplus stock of her little ranch and shipping to her old friends in Hawaii. Many who heard her talk wondered at this because the Hawaiian Islands are supposed to be great fruit producers, but peaches, pears and many smaller fruits are not produced there in quantity, and never of the quality which California produces, so ready sale was found for all she could put up. Her means were too limited to permit of buying a canning outfit, but with the assistance of a tinner she contrived a cooking apparatus which just fitted the top of her stove. The size of this was 18 by 22 inches, and it held 20 number 2½ cans. She invested in cans and the necessary utensils for the first year's work, the total expenditure for the outfit being $7.50. This exhausted her means so that she was unable to secure labels for her cans, but she did provide herself with a small rubber stamp for each variety of fruit. This was rather crude, but her friends found the contents of the cans of such quality that they forgot the label. The soldering was also somewhat of a problem, but the trick was soon learned and ultimately the desired professional look was obtained. The total output of the little plant when crowded to the limit was 300 cans per day. This year orders are already coming for more of Mrs. Roberts' product. Prosperity is increasing, for instead of the rubber stamp, she has this year a neatly printed label for each variety of fruit. She hopes this year's returns will justify her plans for an attractive lithographed label for her output of 1915. We mention these details as an encouragement to the disheartened ones who feel that they have not the money to buy the regular canners which are put up in prices ranging from $5 to $1000. A start may be made with home-made appliances, regarding which other articles in this issue of the Cultivator give information. But as to Mrs. Roberts' methods here is her own story as read at the convention:

* * *

Two years ago I realized that my help was needed in the poultry plant that had been established on our ranch and its yearly increase in the number of fowls was making an increased demand on my time and strength. I could not give the outdoor work the attention it needed without slighting my housework, and this clashing of duties led me to see that I must devise some way of securing help and release from housework. So I set myself to studying the problem of ways and means. It did not take me long to decide upon the way. It was home-canning of selected fruits. But that meant a market, and to work up a market time would be needed, and I did not have time to waste. So I set myself to working out the problem of means. After weeks spent in thought and study I received my inspiration. Hawaii, my birthplace, I could surely find a market there.

Acting upon this new thought I sat down and wrote to a number of my island friends, telling them of my project, and in two or three weeks I began to receive answers and orders. My market was assured for that season.

It was necessary to decide upon a canning outfit. We had sent for catalogues and had studied them carefully. I had also talked with the manager of our local cannery and received much valuable information, but to purchase the outfit necessary for our purpose was beyond our means. So we set to work and designed one that we felt would meet our immediate necessity. The design was submitted to one of our hardware firms and their estimate was so reasonable I gave them my order. I mention this fact because I wish people to know that home-canning on a commercial scale can be installed at a small cost, and we have demonstrated that our canner will answer our purpose for two or three years to come. Last season one order called for 800 24-ounce cans of canned fruit and a small order of jams and sweet pickles put up in glass jars. When the fruit was wrapped in home-stamped wrappers and packed and hauled we found that the freight bill called for 1800 pounds. This year I have advertised more extensively. Besides the personal note, I have added a neatly printed circular and order sheet, which gives the variety and names of fruits used, cost of each variety packed in case lots, amount desired, name and address of the party ordering. This order sheet will be mailed to me, kept on file and filled. This order sheet gives my patrons a choice of the varieties named and the number of each variety desired, and it gives me an idea of how much fruit will be needed for the season's output.

Secure Biggest Returns by Home Canning

Home Canning Methods Described by Justo P. Zavalla in Address and Demonstration Before State Fruit Growers Convention

The different operations involved in the process of canning can be divided as follows:

Preparation of the raw material, canning, syruping and preparation of the syrups, capping, exhausting, tipping, cooking, cooling, testing for leaks, lacquering, storage, labeling.

These operations have to be discussed briefly and in a simple manner, so as to give a clear understanding of the influence that they exert in the process of canning.

Preparation of Raw Material.

When the canning of the fruits is to be done on a large scale, that is to say, when the amount of fruit to be canned cannot be obtained from the canner's orchard, then it is necessary to buy fruit outside. In all cases the fruit should be of the best quality if high commercial grades are to be obtained.

In the preparation of the raw material it has to be sorted as follows: First, according to size of fruit, large, medium, small; second, according to ripeness of fruit, green, medium, overripened; third, according to appearance, sound, blemished.

In order to accomplish this operation the help should be furnished with wooden boxes or any other thing suited for that purpose in which to put the sorted fruit.

This operation is one of the most important features of the different steps of canning, and great care should be taken in order to be sure that they have been done in the best way. If any of the mentioned operations is neglected troubles will arise and the succeeding manipulations will be greatly hampered.

With these general principles in mind, we will now describe the different processes of preparation to which the various fruits are submitted before they are canned.

Apricots and peaches should be cut in halves, pitted and classified as follows: Green, medium, soft, pie, blemished. Green fruit, this fruit is not perfectly ripe, but is of good size and sound. Medium fruit, fruit of an ordinary size, sound and sometimes larger and in good condition of ripeness. The greatest portion of canned fruit belongs to this grade. Soft fruit, this fruit is also of good size, and sound, but shows a greater degree of ripeness. Pie fruit, this fruit is overripened and should be used for pie making or the cheaper grades of fruit. Blemished fruit, in this sort of fruit we find all degrees of ripeness. This is not sound fruit, and is generally placed in what is called gallon pie can fruit, and placed in what is termed the "pie grade." After this operation comes the peeling which can be done by hand or by the use of a 10 per cent solution of caustic soda. The temperature of the water should be kept at the boiling point, and the fruit should be submitted to the action of this solution from 30 to 40 seconds, depending on the conditions of the fruit and the excess lye removed immediately by washing. When peeling by hand the Pomona peeling knife is generally used and also the Carmichael pitting spoon. In all cases after the fruit has been peeled it should be carefully washed before it is sent to the canning tables.

Cherries, grapes, strawberries, raspberries, blackberries, etc., must be stemmed and classified according to

Canning Demonstration at the State Convention

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Extra Choice Pomelos, 3-4 and up, 60 cts.
Spineless Cactus, 12 slabs $1.00; 100 for $5.00

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"NATURE GROWN TREES"
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what has been already mentioned.

Plums have to be sorted according to size, appearance, degree of maturity and perfection of washing. Cherries and grapes are sometimes pitted, cherries by machine and grapes by hand.

Pears have to be cut in halves, lengthwise, peeled, cored, and classified according to size. In case sliced grades of peaches and apricots are to be prepared, this operation can be done by hand, using a well sharpened knife.

Canning.

The next important operation is the filling of the cans, which is done by hand and according to standard weights, depending on the size of the cans.

Table of Grades and Syrups Used in Canning.

Fruit	Syrup for Spec. Extras	Syrup for Extras	Syrup for Extra Stands	Syrup for Stands	Syrup for Seconds
Apricots	50%	40%	30%	20%	10%
Peaches	50%	40%	30%	20%	10%
Pears	40%	30%	20%	15%	10%
Cherries	40%	30%	20%	15%	10%
Plums	50%	40%	30%	20%	10%
Grapes	40%	30%	20%	10%	10%
Strawberries	60%	50%	40%	30%	20%

To give a better understanding of the weight of the cans filled with fruit without the syrup, the different grades and also the number of pieces that each can contains is given in the following table:

PEARS

Grade of Fruit	Weight in oz.	No. of Pieces	Size of Cans
S. Extras	23½ to 24	8 to 10	2½
Extras	23½ to 24	10 to 12	2½
E. Standards	23½ to 24	12 to 14	2½
Standards	23½ to 24	14 to 18	2½
Seconds	23½ to 24	18 to 22	2½
Pie	24 to 25	.. ..	2½
Water	24 to 25	.. ..	2½
Extras	28 to 30	7 to 11	3
Extras	14 to 16	9 to 14	2
E. Standards	13 to 14	9 to 12	1
Extras	68 to 70	23 to 25	8
E. Standards	68 to 70	40 to 45	8
Pie	80 to 82	.. ..	8
Water	80 to 82	.. ..	8

During the operation of filling the cans plenty of water should be used in order to wash the fruit thoroughly and avoid the browning of the pears when they are left dry. The pieces in the cans should be so arranged as to leave plenty of room for the syrup and also to obtain the required weights.

Special care should be taken in the matter of sorting the fruit before it is put into the cans, in order to obtain a uniform pack. The cans used for canning purposes should be stamped with a simple combination of letters in order to identify the concentration of syrup that should be added and also the length of time that they should be cooked. A previous operation to filling the cans is the washing of them.

Syruping and Preparation of the Syrups.

In general the syrup can be prepared in a tank. The sugar and water may be boiled by a current of steam or by other means. When the foam which appears at the surface of the boiling syrup goes down to the bottom of the tank it is ready to be racked into other tank in which it is diluted to the required gravity. The syrup before being used should be carefully filtered. In this way it will show a bright color and consequently a good appearance in the cans. In the preparation of syrups it is necessary to use a therometer in order to know the temperature of the syrup and the corrections to be made according to the readings registered by the hydrometer. To use the hydrometer fill a glass cylinder with the syrup to be tested and insert the hydrometer. Read the per cent sugar at the surface of the liquid. A Balling hydrometer is best for this purpose. In order to fill the cans with the correct degree of syrup it is necessary to identify the grade of fruit they contain by looking at the combination of letters that we have referred to in a previous paragraph. The temperature of the syrup as well as the Balling must be read to get an accurate idea of the true per cent of sugar. By use of the following rule the temperature correction is easily made.

Temperature Corrections for Sugar Tests of Hot Syrups.

Take sugar per cent by Balling hydrometer and Fahrenheit temperature. Substract 60 from the temperature, multiply by .0490, add this last figure to the sugar per cent shown by the hydrometer. Result is true per cent of sugar. Example: Balling=50 per cent. Temperature=175 per cent. Then the rule is: 175—50=125; 125× .0490=5.1 per cent. 50+5.1=55.1 per cent. Therefore 55.1 per cent is the true reading. This temperature correction is very important and should be made.

Capping.

After the cans have been filled with syrup they are sent through the exhausting boxes in the large canneries where double seaming machines are used for that purpose, but when canning at home this operation is done by hand, and if carefully done there will be no danger of putting the fruit in contact with the acid and lead used. The capping of the cans is very simple, and it only requires a little practice to make a skilful operator. After the caps are put on the cans the soldering fluid should be added with the aid of a little brush, after which the hot capping steel is put over the cap, which melts the lead they contain. If this operation is perfectly well done there will be no leaks. Leaks are to be avoided as they in time will become swells, and therefore result in the loss of the finished product. The vent hole in the center of the cap is left open till after exhausting of the cans.

Exhausting.

This operation has to be done in order to expel the excess of air that the cans contain, which, during the sterilization, will develop a great pressure, the caps of the cans will bulge, and therefore the storage of the cans becomes difficult. The length of time for this operation varies from four to five minutes when the water is at the boiling point. Any tank filled with water of the required capacity can be used for this purpose, provided that the top of the cans should not be covered with water, which otherwise will penetrate the cans and will decrease the commercial value of the products.

Cooking.

After the exhausting operation the cans are tipped and then are ready to be sterilized. Tipping consists in soldering the vent hole with a drop of solder and hot tipping steel. The cooking operation is very important and the final results of the preceding processes of canning depend on the way this operation is accomplished. In general the duration of the sterilizing depends upon ripeness of the fruit. The best system to follow in order to ascertain the length of the cooking is to make a skilful examination of the fruit previous to canning. This is an important fact and should be emphasized. We know that the degree of ripeness of the fruit varies with the methods of cultivation and with the time at which it is gathered. Another way of determining the time that the fruit should be cooked is by processing three or four cans at the same temperature, but during different lengths of time. In this way, by examining the condition of the fruit after cooking, the length of time can be easily ascertained. This operation should be practiced as often as it proves necessary. The following table gives an idea of the temperatures of cooking different fruits:

Time Table

To be followed in the use of the four different types of portable home canners. For altitudes of 4,000 feet or more above sea level, add about 20 per cent or 25 per cent more time to this schedule.

	Size of Cans	Hot Water Outfits at 212° Bath Minutes	Water Outfits Above 212° Seal Minutes	Steam Pressure 5 lbs. or More Cooker Minutes	Cooker 10 lbs. or More Pressure Minutes
Apples	3	15	15	10	6
Apricots	3	15	12	10	6
Asparagus, greens	2 or 3	60	60	40	30
Beans, Lima and String	2 or 3	90	60	60	30
Blackberries, Dewberries	2 or 3	8	8	6	3
Cherries, Peaches	2	15	12	10	5
Corn, without Acids	2	240	180	60	40
Grapes, Pears, Plums	2	15	15	10	6
Peas (field)	2	60	60	40	30
Peas (garden or English)	2	60	60	40	30
Pineapple	2 or 3	30	25	10	10
Raspberries	2 or 3	15	10	6	3
Sauerkraut	3	50	50	40	25
Sweet Potatoes	3	80	70	60	40
Strawberries	3	10	8	6	3
Tomatoes	2 or 3	22	20	10	6
Quince	3	30	25	15	10
Tomato Juice	2	20	20	15	10
Pumpkin	3	50	50	40	30
Figs	3	30	20	10	5
Squash	3	50	40	30	20
Spinach	3	60	60	40	30
Rhubarb	3	25	25	15	10
Beets	3	20	20	15	10

Note—This is a supplement to Farmers' Bulletin No. 521. By following the general instructions of the Bulletin in connection with the time table, you will have the information necessary to do the work of canning all kinds of fruit and vegetables.

(O. H. Benson) U. S. Department of Agriculture.

SYRUPS FOR USE IN CANNING FRUITS

Sugar	Water	Baume Degree	Per Cent Sugar or Balling Degree
1 pint	¼ pt.	40	74
1 pint	½ pt.	32	58
1 pint	1 pt.	24	44
1 pint	1½ pt.	17	31
1 pint	2 pt.	14	25

BRINE FOR VEGETABLES

1 pound salt to 12½ gallons water gives 1% brine.
2 pounds salt to 12½ gallons water gives 2% brine.
3 pounds salt to 12½ gallons water gives 3% brine, etc.

It should be borne in mind that these figures cannot be taken as absolute because they vary widely according to the facts already established. The proper degree of cooking varies with the varieties of fruit under processing. We may illustrate this, taking peaches as a practical example. The proper degree of cooking is recognized when the samples opened show the following characteristics: Uniform color over the whole surface, softened texture within certain limits but should not be too soft. The syrup must be bright without any particles of fruit, especially in the case of high commercial grades.

The proper texture of the fruit can be ascertained by using a spoon with which every piece of fruit under observation should be tested. If the pieces of fruit are penetrated by the spoon with light pressure it will mean that they have received the proper degree of cooking. The same facts should be taken into account in testing other kinds of fruits.

Cooling.

As soon as the cans have been cooked sufficiently they must be quickly cooled in water in order to decrease the action of the temperature on the fruit. The water used for this purpose should be continually renewed because it soon becomes warm.

Testing for Leaks.

After the cans have been cooled, each of them should be tested for leaks. It is very easy to recognize leaky cans, due to the sound that they produce when they are struck with a little piece of wood. In some cases, due to lack of filling the cans, they produce a similar sound to the leaky ones, but it can be distinguished by squeezing them. In the case of leaks they should be separated and sent back to the processing department, where they should be put in a tank containing hot water, but not boiling, in order to place the leaks, which should then be carefully soldered.

Storage.

The cans should be piled in groups according to the quality of fruit they contain. Previous to storage the cans should be lacquered in order to give them a better appearance and also to prevent the tin becoming rusty. Lacquer may be made by dissolving shellac in gasoline.

Labeling.

This operation is easily done by hand. The labels to be used should bear the name of the canner, quality of fruit contained in the cans and also the weight. There are in the market different styles of labels, and it can be said that each brand has its own label.

The handling of the home canning outfits is very simple, and following the instructions given by the various concerns that sell them, good results can be obtained.

Vegetable Canning.

The operations involved in the process of canning vegetables are very simple, and they may be summarized into three general principles: The use of sound raw material, the observation of a very strict hygienic procedure from beginning to end, great care in maintaining the proper temperature while cooking in order that all the micro-organisms that may have accumulated during the handling of the unprocessed raw material will be destroyed. With these purposes in view we will give a brief description of the different manipulations involved in the process of canning tomatoes, asparagus, beans and peas.

Tomatoes.

The first step is to secure a good, sound, raw material which should be thoroughly washed with cold water. After this operation the tomatoes are scalded till the skin becomes loose. The water used for scalding should be kept as clean as possible. The skin of the tomatoes is taken off by hand, and the peeler should at the same time cut off all the decayed or green parts of the tomatoes in order to secure a better looking product. The peelers should be furnished with buckets in which the peelings and peeled tomatoes should be put separately. Next to this operation comes the filling of the cans, which contain from 25 to 28 ounces standard pack cans No. 2½ and from 40 to 42½ ounces solid pack cans No. 3. To obtain those two grades of pack the peeler should classify the tomatoes according to size.

The cans which are supposed to be solid pack must contain nothing else but whole tomatoes with very little tomato juice. After the tomatoes are put in the cans they should be compressed in order to eliminate excess of juice, which gives a bad appearance to the finished product, and at the same time constitutes a fraud. In case of standard pack, tomatoes of smaller size than those used in solid pack are put in the cans which afterwards are refilled with tomato "puree." This tomato juice or "puree" is made of overripened tomatoes which are deprived of the seeds, and the juice is concentrated to a certain extent and cooked with a certain amount of salt. The variety of tomatoes mostly used for canning purposes is called "Red Stone."

Asparagus.

The first operation is the cutting of the stalks according to the length of the cans used for packing. After this the asparagus should be thoroughly

"I found all that I was looking for —in Milford Valley.

Leland S. Bonham

Leland S. Bonham

Milford, Utah, May 27, 1914.

Western Securities Company,
710-712 Hollingsworth Bldg.,
Los Angeles, Cal.

Gentlemen — After spending about $500 studying land conditions throughout California and Arizona, I made a trip to Milford, Utah, and as a result have bought eighty acres of your land. I found conditions there which embraced about everything I had been looking for—fine soil, water, climate and markets, and the crops which I saw growing there convinced me thoroughly that Milford Valley was the place for me.

I can very cheerfully recommend to all my friends who want to find the ideal farm home, as well as a place to make money, that they make a trip to Milford and look it over. Yours truly,

LELAND S. BONHAM.

The above letter from Mr. Bonham, a practical, successful rancher. is only one of many which we have on file in our Los Angeles offices from highly enthusiastic purchasers of land in Milford Valley. These letters are from men who have combed the farming district of the west "with a fine tooth comb" in a search for **the best land for the least money**—the richest soil, the cheapest and most abundant water supply, the best potato and alfalfa land, the best deciduous fruit soil, the highest priced markets, the best social and educational advantages, an invigorating, health-giving climate, pure, soft drinking water, contented, well-to-do neighbors, etc.

On Main Line of Salt Lake Railroad Adjoining Live Town of Milford

Alfalfa (baled) sells today in the town of Milford at $19 per ton. Butter fat brings from 33 to 40 cents per pound the year 'round. Apples command from $2.50 to $3.50 a box. Potatoes bring up to 90 cents a bushel. Hog cholera is unknown in this valley — **during 1913, Utah imported $3,000,000 worth of hog products.**

The early buyers are locating suburban to the rapidly-growing city of Milford — and are easily gaining a $50 an acre advantage over those who later must buy several miles distant from the town.

Prosperous, well-known ranchers from Imperial valley, San Diego, Orange and Riverside counties and the Whittier and Ventura districts have just located on Milford lands. Only the best type of ranchers are locating here—men who know the general farming business and have made money in it.

If you are a shrewd investor **you'll want this land**—you'll surely want it when the people of the valley tell you it will be worth $250 to $300 per acre when in alfalfa. If you are a keen business man you'll want 80 to 160 acres of this land **for your son.** It will give him the opportunity for **success and independence.** Write for our illustrated booklet.

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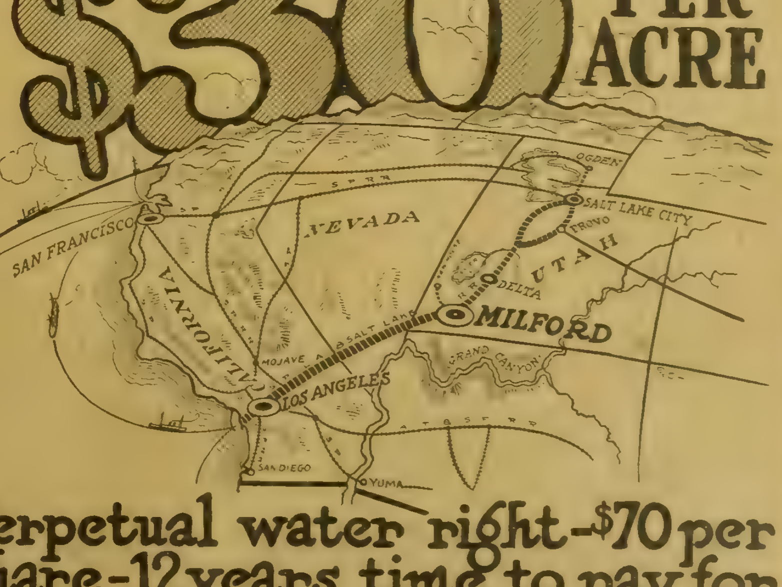


Perpetual water right-$70 per share-12 years time to pay for it if you desire.

washed in cold water and then blanched in hot water during a period of time that varies with the consistency of the stalks. The sorting of the asparagus has to be done according to the following commercial grades: Giant, mammoth, large, medium and small.

The brine used for filling the cans is prepared by dissolving the desired amount of salt when the water is at the boiling point. The concentration of the brine used in canning asparagus is of two per cent hot solution, which is prepared by adding to 12½ gallons of water two pounds of salt. After the cans have undergone the operations mentioned in connection with canning of fruits and cooked according to the figures given before, they should be cooled right after this operation is done. (See cooking table given under canning of fruits on a previous page; the times and temperatures for vegetables will be found in this table).

Beans.

The beans used for canning purposes should be fresh and not wilted. In case the canning is delayed for one reason or another and the beans are already gathered they can be put in fresh water for a time, which will restore their crispness. The different grades of beans are as follows:

Beans up to 1½ inches in length are No. 1 grade; beans from 1½ inches to 2½ inches, No. 2; from 2½ inches to 3½ inches, No. 3; pods without any seeds showing in them, No. 4; pod with small seeds showing in them, No. 5 grade. The No. 5 grade are cut or broken into four or more pieces. The next operation is the blanching, which is done in the same manner as stated for asparagus, etc., and the length of time varies with the condition of the beans. After the cans are filled with beans a three per cent brine solution is added. Finally they are processed according to the figures given in the table temperatures. In case of string beans they should be stringed, and in all cases thoroughly washed before they are canned.

Peas.

Should be classified according to size and degree of maturity. The tender peas command the higher prices, therefore this sorting should be carefully done. After this the peas have to be blanched in hot water, the length of time varying with the condition of the peas. When blanching the water should be renewed as often as it is possible. When the peas submitted to the blanching operation show a lightly wrinkled surface they are ready to be taken off the bath. In order to classify the peas according to the six standard sizes meshes of six different diameters shauld be used. The diameter of the mesh is as follows: 13/32 inch, 12/32 inch, 11/32 inch, 10/32 inch and 9/32 inch.

The mesh should be shaken so as to facilitate the grading. The mesh with the larger holes is put on the top, and the next underneath, and so on to the smallest in diameter. The cans are filled by hand or machine, and the syrup added, which is one and one-half per cent brine solution, to which two pounds of granulated sugar is added per 12½ gallons. After the cans are cooked they should be cooled immediately (use temperatures given in the cooking table). To secure good success it is necessary to pack the peas when they are fresh and when there is no sign of fermentation. Otherwise the formation of lactic acid begins and the swelling of the cans soon takes place.

* * *

CAUSES OF SPOILING OF CANNED FRUITS AND VEGETABLES

In the presentation of this paper we desire not to discuss this topic from a purely scientific point of view, but we will pay more attention to the practical problems connected with the best methods of canning that should be practiced in order to obtain the most valuable results. At the same time it is our aim also to recommend the most practical ways to be followed to decrease the losses that occur after the fruits and vegetables have been canned.

The operations of canning as performed at home are in all cases easier than those required in a large plant.

If we analyze the different factors that intertwine in the decomposition of canned fruits and vegetables we will find that the most important are:

Unfit raw material, unfit cans and glass jars, carelessness in not having clean fruit, utensils, etc., over-filling cans, carelessness in sealing cans, carelessness in cooking cans.

By unfit, raw material we mean those fruits or vegetables which are partially decomposed. The decomposition of fruits and vegetables is due to the action of very small organisms which can be classed in three groups: Molds, yeasts, bacteria. The effects of these organisms upon the fruits and vegetables become more noticeable when the surrounding temperature conditions favor their growth, and also when the decayed portions are allowed to remain in contact with the sound, raw material.

These facts, considered at their true value, would be sufficient to prove the necessity of making a very careful selection of the raw material before it is canned. This operation is very simple, and it certainly pays to have it done as well as possible, for it will help the canner a great deal in obtaining a better looking product of a long keeping quality. An operation that should be always performed is the blanching of the raw material before it is delivered to the canner. In this way we will greatly improve the appearance of the finished product. The blanching can be done by using a tank filled with hot water or any other thing fitted for that purpose in which the raw material should be submerged for a few minutes with the aid of a basket.

The use of unfit cans and glass jars is a point which every canner must give a great deal of attention. The making of tin cans has improved right along since the beginning up to the present time, and as a result of this improvement we find that one of the greatest achievement of the industry is the making of sanitary enameled cans.

The reason why these cans are called sanitary is none other than that of the use of a very small amount of lead in the sealing operations. The advantages of this may not be doubted. The danger of poisoning due to the action of lead has been minimized to such an extent that now it is of a little consequence. The inspection of the cans before they are sealed is an operation which by no means should be neglected. The time is coming when the machinery used for making the cans will reach such a high state of perfection in the matter of seaming that no allowances will be necessary for leaks due to imperfection on the side seaming of the cans. But as long as this matter remains to be solved the inspection of the cans, to which we referred in a previous paragraph, should be accomplished before the cans are filled with fruit, if saving of money and time is the aim of the canner. The glass jars used in canning should be in all cases free of cracks, which in time will break, due to lack of care in the matter of handling them or to differences in temperature. The rubbers should be new and caps should be sound and well fitting.

One of the most important features of the different steps involved in the operations of canning is hygienic conditions under which the canning of fruits and vegetables is accomplished. The raw material, after it is cut in pieces, for instance, has to be thoroughly washed. In this way we will secure a better looking product, especially when glass jars are used. Besides this, by using water of good quality in the operation of washing the fruit before it is canned, the number of organisms that usually come in contact with the raw material will be decreased, thereby facilitating the preservation of the fruit. Fruit that drops on the floor should never be put in cans before it is washed. The cans and glass jars, before being filled with fruit, should be carefully washed. The tables used for cutting the fruit, and also all the outfit used in the operations of canning, should be kept clean as possible.

The cans and glass jars should be filled with fruit in such a way as to leave plenty of room for the syrup and also to facilitate the sealing of them. If the cans are overfilled the operations of capping are made difficult, especially when it is done by hand. Besides this the danger of putting the fruit in contact with the acid and solder used for sealing is increased.

The operation of sealing the cans is an important one, and the canner should spend a great deal of time to secure a good sealing. When the sealing is done by hand it requires the aid of experienced hands. Otherwise small openings may be left and therefore the action of the sterilizing bath will be of a little value.

The last step in the canning operations is the cooking of the raw material. This operation can be considered as one of the most valuable features of this industry. If the sterilizing process is neglected the whole season's pack will be lost, no matter how carefully the preceding operations have been accomplished. In order to facilitate the cooking of the fruits it is necessary to have it classified according to degree of ripeness. If this is carefully done much of the trouble connected with the cooking is reduced to a minimum. The water used for cooking should always be kept at the boiling point. The length of time the raw material should be cooked depends on the nature of the raw material itself.

It is difficult to try to state definite figures to be used in the process of cooking, for the simple reason that they vary from one day to another. Then the best way to be followed in order to ascertain the right time of cooking is by making several tests during the day's run.

The heat penetrability while cooking the fruit varies with the kind of fruits used, with the length of time, with the temperature of the cooking bath, and finally with the concentration of syrup. By heat penetrability is meant the time required to register at the center of the can the surrounding temperature. The higher the temperature registered at the center of the can after certain period of cooking, the lesser the danger of getting spoiled cans after this operation is done. One of the best methods to follow in order to know when the fruit is thoroughly cooked is by testing the pieces contained in a can. If they show the same appearance in color and also the same degree of hardness it will prove that they have received the right time of cooking. If the fruit has been cooked 13 minutes, and does not show any sign of damage, due to an excess of cooking, it would be advisable to prolong the cooking two or three minutes more, providing this increase in the time of cooking would do no harm to the product. In this way the probability of getting swelled cans, due to under processing, will be less and financial results will be better.

The previous discussion deals with the practical methods of minimizing spoilage. A few words regarding the "germs" that cause spoilage after canning may be of interest.

In general those that occur in spoiled cans of fruits differ from those in spoiled cans of vegetables by being more easily killed by heating. The organisms in spoiled fruit are principally yeasts and molds, all killed below the temperature of boiling water. Those in swelled cans of peas, asparagus, etc., are usually of types of bacteria killed above the boiling point of water, and hence require heating under steam pressure. Their resistance is due to formation of bacterial spores or "seeds," which are very hard to kill. If these are in the cans or on the vegetables, etc., they will multiply in the cans and spoil the contents if the temperature has been insufficient or the time too short.

Fruits contain a great deal of fruit acids that aid in sterilization or killing of the "germs" by heat; vegetables are usually almost free from appreciable amounts of acid, making sterilization for this reason difficult.

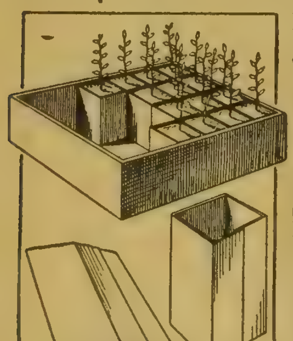
These facts explain why it is necessary to use extra precautions in sterilizing vegetables, and why fruits are easily sterilized. It also explains why spoilage of fruit is usually due to leaks through which yeasts, etc., gain entrance, while swelling is often due, not to leaks, but to growth of bacteria that were sealed up in the cans and survived cooking.

In sterilizing fruit then, one of the principal aims of cooking will be simply to render the fruit palatable and of the proper texture. If this is accomplished at the boiling temperature the yeasts, molds and bacteria of the fruit will be killed. If spoilage then results it is from defective and leaky containers. Vegetables, on the other hand, because of the resistant bacteria spores, must be cooked under pressure, not with the idea of cooking or rendering them palatable, primarily, but with the idea of killing the bacteria that cause swelling and souring. If pressure cookers are not available for vegetables, repeated sterilization at 212 degrees, the boiling point of water, may be used, that is three heatings on three successive days. The time between each heating allows the bacterial spores to sprout, and when young they are very easily killed. Hence if the spores have survived the first heating they will sprout between the first and second heating or second and third, and can them be killed at 212 degrees.

By way of summary it may be stated that spoilage is due chiefly to the action of "germs" or small living organisms that decompose the canned goods. Their activity is favored by the following factors: Unfit or practically spoiled raw material, defective containers, uncleanly methods, overfilling of cans and jars, carelessness in sealing containers, improper temperature or time of cooking. The methods of keeping down spoilage consist in avoiding or controlling the above conditions.

People from the east who come to live in the Sacramento valley must adapt their houses to climatic conditions. A tight box house, with few windows and no screened porches, may be all right in North Dakota, but in this country plenty of screened porches to sleep and eat and live on are essential. It is also important that there be one or two rooms in the middle of the house that can be closed up tight in the morning and kept 10 to 15 degrees cooler than the outside air during the middle of the day.

Collapsible Planting Pots



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HELPS IN CANNING

By Wm. V. Cruess

Publications.

Farmers Bulletin 203, United States department of agriculture; Farmers Bulletin 521, United States department of agriculture; Bulletin 151, United States bureau of chemistry. Bulletins 521 and 203 may be had by writing to Jos. Arnold, editor and chief of division of publications,' Washington, D. C. They are free. Bulletin 151, bureau of chemistry, will be mailed you on sending 10 cents in coin or money order (stamps not accepted) to superintendent of documents, Washington, D. C.

Syrup Gauges.

Balling gauge or hydrometer reads per cent of sugar in a syrup.

Baume scale does not read per cent of sugar, but 1 degree Baume equals 1.8 per cent Balling (approximately), or 1.8 per cent sugar.

Baume	Balling or Per Cent Sugar	Baume	Balling	Baume	Balling
5	8.8	20	35.7	33	60.0
10	17.7	25	44.9	35	63.9
15	26.6	30	54.3	40	73.7

The syrup hydrometers and a 12-inchx1½-inch glass cylinder may be obtained from any chemical supply house for from 50 to 75 cents for the hydrometer and 40 cents for the cylinder. All syrups used in canning fruits should be made according to Balling or Baume test. Jellies should be made so that they will test 50 degrees Balling or 28 degrees Baume, if test is made on the boiling liquid, and 58 degrees Balling or 32 degrees Baume, if made on the cold liquid.

Cans.

"Solder-hemmed" cans are best for home use, as they contain a ring of solder on the top; no extra solder is necessary. "Enamel-lined" cans are best for very acid or highly colored fruits.

No. of Can	Diameter in Inches	Height in Inches	Capacity in Ounces
1	2 11/16	4	11.6
1 Tall	2 11/16	4 1/4	12.3
2	3 3/8	4 9/16	21.3
2 1/2	4	4 3/4	31.2
3	4 3/16	4 7/8	35.0
3 Tall	4 3/16	5 1/2	39.0
10	6 3/32	6 3/16	107.3

DEFINITIONS OF CANNING TERMS

The following definitions will enable the beginner to know the ordinary terms used in canning:

Scalding

To dip fruit in boiling hot water in order to remove the skin.

Blanching

To boil quickly in water by placing the vegetables in a cloth bag, which is to be lowered entirely under water. This is done in order to eliminate acids and bitter substances from the fruit or vegetables.

Exhausting (Sometimes Called "Parboiling")

To boil fruit or vegetables for a few minutes in order to drive out of the fruit and container all gases and surplus air and permit expansion before sealing the venthole. Exhausting is not practiced by all canners, but the writer considers it important, and safer with the many kinds and qualities of fruit and vegetables canned, especially when using the hot water bath outfits at home.

Exhausting causes most fruit to shrink, but swells corn and some vegetables.

Sterilizing

To boil fruit or vegetables for a certain period after the container has been completely sealed. This is sometimes called "processing" or "boiling."

Tinning the Steel

To put the hot steel used for capping cans in sal ammoniac and solder, turning the steel several times until smooth and bright, and then dipping it in soldering "flux."

Capping

Soldering the little solder-hemmed tops on the cans with the capping steel.

Tipping

Closing or sealing the little air hole or vent in the center of the tin cap, just between the exhaust and sterilization periods.

Processing

(Used for "sterilization," "cooking" or "boiling." These expressions all mean the same thing.) To completely destroy all bacteria, spores, germs, etc., in hermetically sealed cans and packages by hot water, steam or steam pressure.

Flux

Soldering flux is prepared by adding to muriatic acid as much zinc as will be dissolved, and then adding water equal in amount to the acid. This fluid is used to clean your steel and for wiping all surfaces to be soldered. By the addition of zinc to the acid, zinc chlorid is formed, and this when applied to the tin adds a coating of zinc, to which the solder will readily adhere.

The flux should be applied carefully and none of it allowed to get inside of the can.

The solder will not adhere to tin without this flux or a similar substitute, such as rosin.

A commercial flux can be secured at a drug store.

Look up the meaning of the following terms in the dictionary: Bacteria, yeast, molds, spores, ferment, germs and microbes.

WORKING WITH PULLEYS AND WHEELS

The modern barn is vastly different from what we had fifteen or twenty years ago, and the work of caring for the stock and handling feed is greatly simplified. Then most of the work was done by muscles; now it is a matter of pulleys and wheels.

The hay forks and carriers, the grain elevators, the feed and litter carriers, all help to make farm work interesting instead of mere drudgery. It was hard work to haul manure out of a cow barn on a wheelbarrow, but it had to be done until we got a litter carrier that runs it out on a cable in half the time and without the heavy work.

Conveniences of this kind are just as important as machinery in the field and serve the same purpose. They have made the farm a more pleasant place to live and work.

SUGGESTIONS FOR HOME AND CLUB CANNING

Any one with ordinary intelligence can make a success of canning tomatoes at home by exercising care in following the instructions given in this bulletin. Common sense, good judgement, and experience will make for success in every way. One's individuality is quite as important as rules and formulas.

All fruits, vegetables, juices, meats, and foodstuffs must be completely sterilized and kept in air-tight containers. Insist upon sanitation. The decay and spoiling of fruit and foodstuffs is due to bacteria, spores, ferment germs, etc. Sterilize and cleanse all containers, vegetables and fruit before proceeding with the work.

Open boilers are less desirable than the closed boiler or steam-pressure outfits, as the heat of the water in them cannot exceed 212 degrees F., and the fruit jars must be kept completely covered with the water, thus requiring more time and labor than with the closed outfits

The hot-water canners with close-fitting covers on the boilers do successful work with the ordinary fruits and some vegetables. They operate with little water and much of the sterilizing is done with live steam in the upper section of the boiler. Some of these boilers carry heat from 212 to 216 degrees F.

Steam-pressure canners are most successful for canning all kinds of vegetables and meats, because the greater heat and pressure effect complete sterilization. Steam under pressure raises the heat to about 250 degreees F. and readily destroys all bacteria and spores in fruit and vegetables. From 5 to 15 pounds pressure to the square inch is used in successful canning work.

Use only fresh fruit and vegetables. and always can fruit the same day it is picked.

Tomatoes should first be dipped in boiling water, then chilled in cold water to make them firmer. They will also pack better.

Let the water come to the boiling point before you lower the fruit into the boiler. Begin to count time for sterilization when the fruit enters the boiling water.

Different varieties and different degrees of ripeness require variation in the length of time given to processing. Soft fruit requires longer boiling than sound fruit. Overripe tomatoes will need to process a few moments longer than if they were just ripened, firm and sound.

Some vegetables contain acids that must be destroyed or eliminated before final processing and sealing. This is usually done by blanching or boiling the vegetables in a weak brine before filling the cans.

Differences in climate, soil and fertilizer make changes in the chemical and physical properties of tomatoes and affect slightly the time required for sterilization.

A FEW ESSENTIALS FOR SUCCESSFUL CANNING

In addition to the canning outfit, the following are essential for efficient work:

A clock in a convenient position where all can see it, and scales graduated from one ounce to 24 pounds.

Plenty of clean wiping cloths for wiping cans, coppers and steels.

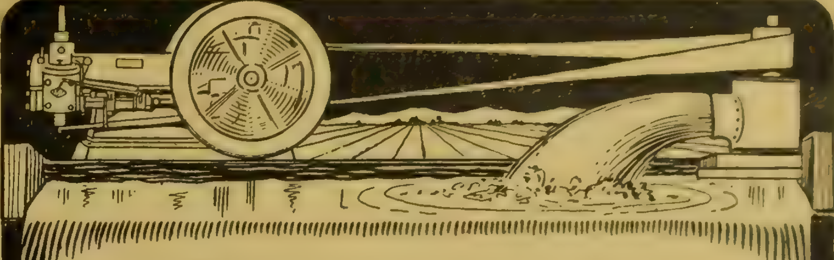
Salt, sugar and plenty of clean, pure water.

A sharp paring knife for each person working; tables, tins, pans or containers, buckets, etc., enough for convenient and efficient work.

The necessary glass jars or a supply of tin cans with solder-hemmed caps and the labels.

Either commercial or home-made soldering flux.

In canning tomatoes it is always advisable to classify your fruit in the following divisions: Extra fine, fine, medium and small. This grading is for convenience in selling. It is well to impress upon the canners the importance of the different sizes of containers; small containers require less time than large ones. A pint can under 15 pounds steam pressure requires about six minutes, and if under five pounds, 15 to 20 minutes. A quart container under 15 pounds of steam requires eight to 12 minutes, and under five pounds of steam, 25 minutes.



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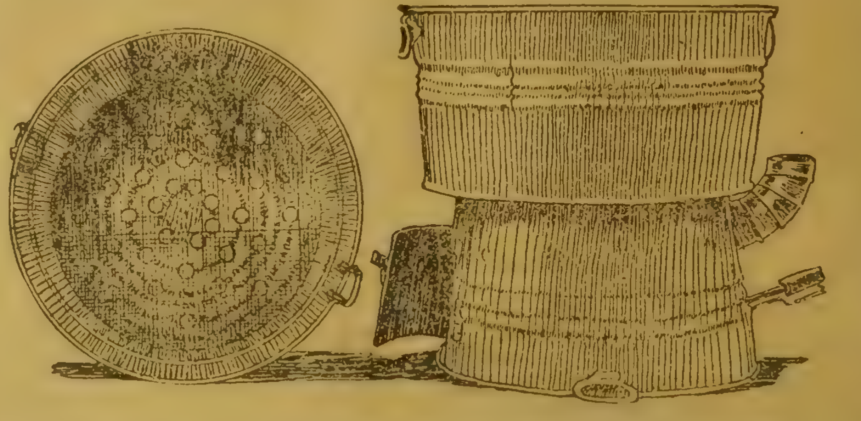
THREE OLD WASHTUBS DO FRESH DUTY

By Emma Chandler, Assistant Federal State Agent of Girls' Canning Clubs in Oklahoma.

Until recently most housewives have used the open kettle method and the glass jar for canning. That is, the tomatoes were cooked in an open porcelain or aluminum kettle and then poured into glass jars. This method has not always proved to be a good one, especially for beginners. It is a slow process and necessitates the worker staying in the warm kitchen all the time the canning process is being carried on. It is not practical if canned tomatoes are to be sold.



The Washtub Canner.

Another kind of a home-made canner that has attracted a great deal of attention on the demonstration trains and at exhibits in Oklahoma is the one made from three galvanized iron tubs, two old ones and one good one. This canner must be used out of doors.

When making a canner it is best to have four parts, a fire box, a vessel which will hold water for sterilizing the material to be canned, a basket for placing the cans in the water and a tight cover.

How to Make It.

When making the tub canner begin with the bottom first and build up. For the fire box use one of the old tubs, cut out the bottom, invert the tub and with a cold chisel cut out a door on one side. Fasten this door in place with wire. Opposite the door and about three to four inches from the bottom make a round opening for the stove pipe. Cut one end of the stovepipe elbow in six or eight equal parts. Bend every other piece half way back. Slip cut end of elbow through the opening in the tub. Bend pieces of elbow on the inside of the tub back against the side of the tub. To this elbow attach one or two joints of stove pipe. This completes the fire box of our canner.

The next part is the water container. The good tub serves for this purpose. This tub should be just a little larger than the one used for the fire box. Place tub No. 2 on top of the fire box.

Make the basket for holding cans out of the other old tub, which should be some smaller than tub No. 2. Remove handles from outside and place on inside of tub. Make several holes about one inch in diameter in the bottom of the tub. Place this inside tub No. 2. Some kind of a tight lid should be provided in order to save time and fuel. A piece of zinc answers the purpose very well.

If fruit or vegetables are canned in tin cans it is necessary to have a capping steel. This may be obtained from any manufacturer of canners. It may be heated in the fire box of the canner. There is a gasolene heater for capping steels on the market which does the work successfully.

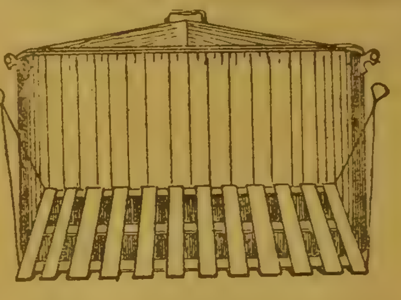
TESTING AND SEALING JELLY

Jelly that is overcooked becomes stringy. Watch it carefully, for when once it is cooked past the jellying point it is ruined. Immediately after the sugar is put in begin testing it by putting a spoonful in a saucer in a cool place; in a few seconds draw the tip of a spoon across the top of the jelly; if a thin film has formed it is done. Turn at once into glasses.

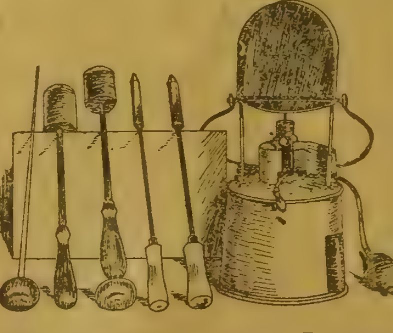
To prepare the glasses: Arrange the glasses on a rack or with a clean cloth under them in a kettle, fill the kettle with cold water, bring to the boiling point. When ready to fill the glasses lift with a large fork or spoon and turn out the water, but do not dry them with a cloth; fill at once with the boiling jelly. Do not fill the glasses quite full; then pour a tablespoon of melted paraffine over each.

CAN EVERYTHING YOU CAN

"There are several ways of canning both vegetables and fruit without a canner. The first thing we will need for a home-made canner is a boiler large enough to hold several cans at once. A tin washboiler is the best, as it is very cheap and can be set on the cook stove. A tray must be made to hold the jars and keep them off the bottom of the boiler. This tray can be made of wooden slats one-fourth of an inch thick. There should be two slats as long as the boiler, and short slats nailed on these the width of the boiler. It will be handier to lift the jars out if a handle is put on each end of the tray. The handle can be made of a piece of telephone wire or clothesline wire. It is nailed on by means of carpet staples, and a handle of wood can be made on top like a water bucket handle to keep the wire from burning the hands."



Washboiler With Home-Made Rack for Cans



Soldering Tools for Steam Pressure Outfit

The above is from the Oklahoma Stockman Farmer prize article on home canning methods. The writer goes on to say that her old time glass fruit jars are used, screwing down or clamping the tops as the boiling is finished. Vegetables she boils in this "canner" one hour a day for three days as it is necessary when steam pressure cannot be had. In that case she boils and seals, then removes the top prior to the next day's canning and seals immediately after boiling, and this is repeated the third day.

The boiler must be kept covered as tightly as possible to secure the highest degree of heat.

"This method of canning is a great advantage in canning fruits, as they are not mashed in the cans. It is also much pleasanter to put fruit in jars while cold."

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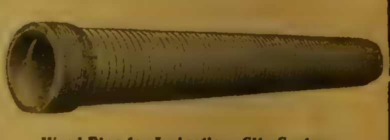

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General Agriculture

WHAT THE SMALL FARMER MAY DO IN THE SACRAMENTO VALLEY

By Sacramento Valley Contributor.

The grain farmer in the Sacramento valley—who handles from 1000 to 10,000 acres — frequently expresses extreme sorrow for the newcomer who is beginning to farm 10 to 40 acres under irrigation. The grain grower is often honest in his belief that the irrigator is doomed to failure and starvation—or if not that—to a very meager living. There was one successful old grain raiser in the upper Sacramento valley who sold the bulk of his acreage to a subdivision company, retaining about 2000 acres. As new settlers came in around him and he became acquainted with them, he used to say, "Well, I don't know what you are going to be able to do on 40 acres, because it looks as though I won't be able to make a living from this little bit of land I have left."

But this is probably only a manifestation of the workings of human nature, and the old man did not mean to discourage his new neighbors. We suspect that if he would recall the time 40 or 50 years ago, when he "took up" his land and started to plow for grain, he would remember that the cattlemen who were ranging stock over several counties were just as sorry for him and quite as confident that he could not make a living on 8000 or 10,000 acres.

From the standpoint of the future welfare and wealth of the state and nation, there is opportunity for considerable serious thought in this problem of the big and the little farmer in our great interior valley. We hear a great deal about the "march of progress" in subdivision and "get more people into the state" and all that sort of thing, but it is not often that much reasoning is applied to the subject. Just how will the small farmer make out? Will he be a factor of benefit in the permanent and successful future of the state? Is the big grain farmer doomed or will the country that is being subdivided all go back to extensive farming as some predict?

As we see it there is room in California for almost everybody. There are areas that may raise grain profitably for years—in other sections the production of high-class sheep and cattle will be a money-making business as long as people eat meat.

But we are especially and continually impressed with the possibilities for the right man and family on the good small irrigated farm.

Perhaps the first factor for the success of this small farmer is the human one. Every one must do his or her share. It is almost impossible for the enterprise to succeed if "nobody works but father." It is just the reverse of the comic song of a few years ago that described a family where "everybody worked but father." We know of many "back to the landers" — city folks impressed with the simple life as they read of it and have pictured it to be—who have gone to farming with the idea that the principal part of the work consisted of consuming cream from their own cows, fresh eggs and vegetables and sitting on the front porch. The whole family rebel at rising before 7 o'clock in the morning. Consequently in the summer the best part of the day for chores and work is gone before they have their breakfast. There is often not money nor revenue enough to hire all the work done, and poor father simply cannot do enough work on the ranch to make it look as though it was being farmed at all.

Now the other kind of a family is one where the main issue is the care of the crops and stock, keeping ahead of the work instead of always being behind with it, and where all are striving to make the greatest possible revenue from everything.

A well-planned diversified small irrigated farm will furnish profitable and pleasant occupation for a family during the entire year and every month there will be a nice revenue.

There will be alfalfa, of course, and every pound of it will be fed on the farm to some kind of stock. From a half-dozen to 15 or even 20 cows should bring in a gross return of upwards of $100 each per year. Skim milk and alfalfa and the corn and other grain grown on land not yet in alfalfa or orchard, or between the rows in the young orchard, will make lots of pork. Several well-bred sows should be kept busy raising pigs for this division of the ranch. A few sheep can always be kept to advantage, utilizing rough feed and weeds that will otherwise be waste, and the local butcher should be glad to pay top prices for the fat lambs and mutton that could be produced where they will be easily available for him whenever he wants them. There will some time be a silo on every one of these small farms for corn grown between the rows in the orchards or in rotation with other crops. Fruit trees and berries will be grown, and as they increase in age, the revenue will increase rapidly. Poultry and bees will always be a steady source of revenue, and in time the magnitude of the business and the revenue will be as big as the man, for nothing is more true than that an acre of land is just as big as the man who is farming it.

Comparisons are not always fair, but the differences in fundamental principles between this self-contained small irrigated farm and the large grain farm it is in many places superseding, leave much of the argument in favor of the small place.

On the one hand the owner and his family furnish all of the labor and the activities are well spread over the entire year; on the big farm the operator is more or less at the mercy of high-priced, inefficient, short-term labor. The small farmer has income from many sources coming in every month; the big grain grower gets his in a lump in the fall or winter. Things can be said for and against each way of receiving income, but the experience of most families is that the steady one is the most satisfactory. At any rate a crop failure or disaster of any kind cannot "break" the small farmer in one season as it can the big grower. Then prices of dairy products, poultry, meat and other somewhat concentrated products is generally more satisfactory than that of raw materials such as grain. This year is not exactly a fair criterion, but the prospects of grain selling at 75 to 80 cents per hundred leave a small margin to the grower when it costs 65 cents a hundred to produce it, as many claim. A 10-cent margin per sack, with a 15-sack crop, is only $1.50 per acre.

Let the good small farmer come to the Sacramento valley confident that if he selects a good location and is the right kind of a man with the right kind of a family, success is sure.

DAIRY COWS SELL WELL

Messrs. Rhoades and Rhoades, auctioneers for a recent sale held by W. H. Ginn of Corcoran, report the sale of 125 cows and 25 calves, most of them pure-bred Holsteins. The average for the entire sale was $100. The top-notcher was $250 for a pure-bred cow. Amongst the purchasers were Messrs. R. E. Lemoin, George Knudsen, E. R. Putz and McAllister & Son.

Dr. F. Franceschi, formerly of Santa Barbara, writes us from Tripoli: "Horticultural possibilities are simply immense here, but one must begin at the very beginning. Plenty of splendid soil, plenty of water, plenty of sun and the vicinity to all European markets are sure to bring very satisfactory results."

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"Rather. When she wants to express her sentiments she has to use the parcel post."

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The Famous Brown and Brandon herd of dairy cattle is for sale. It consists of 330 cows, 48 heifers, 100 calves and 14 bulls.

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If interested in the cattle, the implements or the land, don't fail to write for information and prices. This opportunity will not last long. Address,

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Injurious to Laborer and Employer

Time for Serious Consideration of the Real Viciousness of the Proposed Eight-Hour Law. Even One Farmers Union of the State Has Endorsed It. Communications from Others Favoring It, also from Others Opposed to It.

The farmer may well regard some of the proposed initiative legislation as intended to put him out of business. The man whose family is large enough to enable him to carry on his general ranch operations, or who, in time of stress, can employ a small number of additional workers will perhaps not be so seriously handicapped as the single-handed employer who has occasion to harvest perishable products. The employer of a large force of workers may be able to so shape his affairs that he will not suffer seriously. The manufacturer we believe can also command help, but the middle class farmer, that is, neither the smaller nor the larger one, must practically go out of business. Mr. H. E. Collins, owner of large citrus orchards in Los Angeles County, writes:

'It strikes me the condition of affairs that will exist in California regarding the fruit industry, in event of the passage of this eight-hour law will result in owners of fruit ranches and vineyards renting to companies of Orientals, Japanese, Chinese or Hindus, who, all being partners or stockholders, can work for themselves unlimited hours. The owner will merely supervise the property in a certain sense, draw his dividends and throw out of employment hundreds of deserving white people. A large grower of Thompson seedless grapes from the north has already laid plans toward this end."

Now then the California Cultivator is in favor of an eight-hour day. The writer of these words has been with this paper for 12 years, and during that time the eight-hour day has obtained with the office force. At times overtime has been necessary, but this has been freely given and no charge has been made for it. During the last few years, in addition to the eight-hour day a half-holiday at the week-end has been granted, therefore the Cultivator has no objection from its own standpoint to the eight-hour law, but as it is worded, the disaster resulting from its passage will be so great in some lines that every one who has a vote, and every one who has influence for other votes, will be urged to get busy from this date until November 3rd and use every possible influence to defeat the measure. A great many have remarked to us that it is impossible for such a measure to pass, and to give an idea to such people of the real danger we quote in full resolutions passed by a Farmers' Union located in the Santa Clara Valley:

Farmers' Union's Resolutions

"The Rucker Farmers' Union held a special meeting last Saturday at the Rucker school house to hear Dr. H. R. Chesbro speak on the proposed universal eight-hour law. The doctor declared himself in sympathy with an eight-hour law for the trades, because there the worker is doing a specific, definite thing, but in his opinion it could not be applied to farm labor, such labor being too indefinite. After a number of questions had been asked by the audience and answered by the speaker, Mr. J. Holler offered a set of resolutions for discussion. On motion of Mr. G. A. McJunkin it was unanimously resolved to ask the California Cultivator to publish the resolutions for the consideration of the fruit growers of California.

"Considering the fact that farm laborers work longer hours for less pay than workers in any other industry, the economic oppression and financial dependence of the farmers cannot justly be blamed on the farm laborers, but their causes must be looked for in the increasing monopolization by a comparatively few individuals of all large industries, as well as the monopolization of the markets for farm products, the warehouses for the storage of crops, the cold storage plants, the packing houses and other means of control between the farmer and the consumer, and especially the legalized gambling in farm products by so-called boards of trade, produce exchanges and other speculators. For these reasons, if farmers want to better their condition, they must organize among themselves and by combined political and cooperative action make such private monopolies and gambling in farm products impossible, but not oppose reasonable demands of farm laborers whose unenviable conditions most certainly need improving.

"And considering the fact that the constantly increasing introduction of labor-saving machinery and the application of new inventions will necessarily result in constantly increasing the army of unemployed, and that the best immediate remedy for this terrible condition lies in a general reduction of the hours of labor.

"And considering the fact that a reduction of the hours of labor is a necessary step to the further progress of civilization, as otherwise the increasing misery of the unemployed and the physical overstrain of the employed, resulting from highly intensive labor for long hours, will inevitably lead to intolerable conditions for the masses, with riots, insurrection, bloodshed and all the horrors of labor wars and the dangers to civilization in their following.

"And considering the further fact that the true interests of the working farmer are in harmony with the interests of all other workers, and that we find the most permanent general prosperity and the highest standard of living among the masses—which include the farmers—in those countries where wages are highest and working hours shortest.

"We therefore declare ourselves in favor of the proposed universal eight-hour law, with the understanding that this law will not apply in cases where sudden dangerous changes of weather or unusual dangerous climatic conditions make extra or continuous labor in farming operations necessary to protect the property of the farmer—the crops—from danger or total destruction.

"We believe that the provision of the proposed law, by which extraordinary emergencies of danger to property are excepted from the eight-hour law, very properly applies to such dangerous, uncontrolable, incalculable farming conditions and perishable farm products.

"We have no doubt that this interpretation of the law, which fully protects the interest of the farmer, is acceptable to all fair-minded persons, and that the law will be interpreted in this sense by any judge or jury."

* * *

We call attention to the last three paragraphs in these resolutions. There is nothing whatever in the bill which justifies any such construction. A man may vote with all the mental reservations he sees fit. The law will stand as it is worded and courts can only construe the law without reference to the mental attitude of voters. In this particular the bill reads: "Except in case of extreme emergency caused by fire, flood or danger to life or property." We call attention to the construction which courts have placed upon the 16-hour law, which applies to trainmen and some others working for railway companies. In cases where accidents like washouts, etc., have prevented train crews from getting back within the required 16 hours the courts have construed that the employer has been liable, and a higher court has sustained it and only the decision of the supreme court remains to confirm such decisions. Now if in case of such accidents a railway company must hold up its train and lay off men in the middle of a run, or until fresh crews can be sent to them, how about the farmer's wagon on its way home from town

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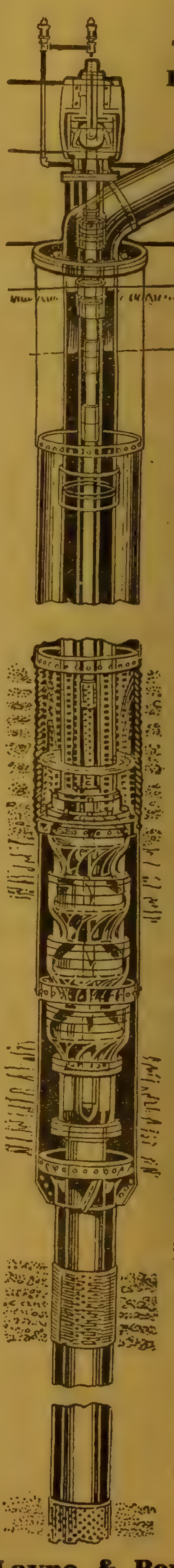

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with a load which a broken trace may have prevented arriving within the required eight hours? The members of Rucker Farmers' Union should do some serious thinking between now and election day.

Another, a subscriber of the Cultivator in San Diego County, writes:

Wm. Bloch

"This is the age of labor-saving machinery and appliances and of methods to make labor more effective. The columns of the California Cultivator are full of advertisements and descriptions of such machinery, appliances and methods. There is nothing in it to make labor easier, only to make it more effective. The men who work the tractor plows have to work as hard as they who still operate the two-horse plow. They work different muscles and different parts of the brain, but they get just as tired in as many hours. This is for illustration of the principle that works all through the various parts of farm work or other work.

"Now if the working people want to get the benefit of the inheritance to all that comes from the accomplishments of inventive genius through the past ages, if they want that in the shape of shorter hours, why should that be denied them? Should the employer be the sole beneficiary? It is true there will be some disadvantage, sometimes even to disastrous extent, to some employers, mainly to small ones. But there never is any law passed that at the start does not work hardship to some one. The larger employers won't feel it. Speeding up under closer supervision, and still more effective methods, appliances and machinery will give them equal results.

"To the working people themselves the law will probably not be an unmixed blessing. There will be indirect disadvantages that, to my mind, will offset the gains.

"As to the employers, those who read the California Cultivator and aim to be up-to-date in their work, those of them who would fight this law, they remind me of the man who got on his knees and prayed:

"'Oh, God, bless me and my wife,
My son John and his wife,
Us four and no more!'"

Mr. Bloch's statement, "There will be indirect disadvantages that to my mind will offset the gains," is entirely true, especially for the laborer. On this point, if we may be pardoned, we will call attention to the condition in this office where, as we have stated, the eight-hour day already prevails. If the law prevents one or all of the force from working more than eight hours in one day it will probably result in the loss to the entire force of the half holiday. We have not canvassed the entire force, but we think the vote of employees in this office will be unanimous against the proposed law. This for the encouragement of the farmer who may have felt that practically all working people will vote for the eight-hour law. Laboring people are not all short-sighted. Further, many are conscientious and have fullest interest in the success of the employer.

A subscriber to the Rural Californian, who now comes into the Cultivator family, writes regarding an editorial in the last Rural.

F. H. Clark, San Diego County.

"In looking over the Rural Californian my eye caught the title, 'Eight-Hour Law." As stated therein farmers are going wild about it. Now I do not believe in unions or the walking delegate, but I do believe in the eight-hour law and will work for it might and main. A man can do a day's work in eight hours, wether it be farming or other employment, and I'll take any man or men, no matter how many, and do more work in eight hours than these wild farmers can do in 12 hours with the same men. A man can do more work in 12 hours than in eight, but will he? If he does he is a fool. I believe in the old saying, 'Work while you work and play while you play.' Give the hired man a chance to play and he will be willing to work and the farmer won't have to sell his farm, for he won't have any trouble with his help and they will not want to see him lose anything. I wish to say you are publishing a fair paper. Keep it so, don't knock the eight-hour law, but push it along. If the farmer would only look into the future he would see it is for his good.

"Perhaps the most important statement in Mr. Clark's letter is 'A man can do more work in 12 hours than in eight, but will he? If he does he is a fool.'"

Permit us, Yankee-like, to ask: "If an employer agrees to pay his laborer $12 for services, but pays in depreciated money of a purchasing value of $8, is he honorable?"

There is and will continue to be a wide chasm between employer and employed so long as integrity is barred and trickery or delivery of less than is paid for is resorted to. No employee is ever paid more than he is getting until he earns more than he is paid.

Any spirit of holding back is dishonorable to the last degree and such employee will or should never get the second job in the same place.

GUIDE TO YOSEMITE NATIONAL PARK

The principal roads and trails in the Yosemite national park are described in detail in a circular just issued by direction of Secretary Lane. The most frequently visited places are the Yosemite valley, the Hetch Hetchy valley and the Mariposa grove of big trees. Yosemite valley, in the southern part of the park, is a great gorge about seven miles long and three-fourths of a mile wide, with a level park-like meadow in its center. The great cliffs which form the wall of the valley rise almost vertically to a height of about 3000 feet, and in many places are beautiful waterfalls which have a vertical drop of from 600 to 900 feet. There are three groves of big trees in the Yosemite park, the Merced the Tuolumne groves, northwest of Yosemite valley, and the Mariposa grove on the southern edge of the park. These trees (Sequoia gigantea), which are the oldest living things in the world, grow to a height of 300 feet, with a circumference of nearly 100 feet at the base, the bark sometimes exceeding 40 inches in thickness. Many of the trees are over 2000 years old. There are several transportation lines operated under concessions from the department of the interior, but every person is at liberty to provide his own means of transportation, subject to the rules and regulations. The circular just issued contains the rates authorized at the hotels and camps, a sketch map of the park, the rules and regulations and a list of books and magazine articles.

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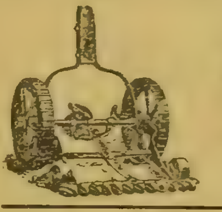

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Thursday, July 2, 1914

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DON'T SIGN EVERYTHING

One danger of our institutions is the ever-ready petition signer. It is always easier to sign every paper that is presented than to turn it down or take time to understand what it means. The professional petition circulator is insistent in manner, and if not persuasive, often abusive if his request for signature is not promptly granted. But every voter owes a duty to himself and to his state not to put his name to every paper which may be presented to him. We doubt not half the names signed to a petition are signed without any conception of its true meaning. There are many petitions of real worth and the petitioners have true convictions as to their worth. Unless you have a conviction, pass them up.

Consolidation

California Cultivator Absorbs the Rural Californian and Now Leads All Weekly Coast Farm Papers in Circulation

In 1877 the old-time Southern California Horticultural Society, realizing the need of an organ, fathered and mothered for nearly three years the Southern California Horticulturist. On January 1, 1880, it passed into private ownership, and Messrs. Carter and Rice began the publication of Semi-Tropic California and Southern California Horticulturist. In November of 1882 Mr. Rice, with Mr. Martin as business manager, launched the Rural Californian, and the next issue announced the purchase of the Semi-Tropic California.

From that time until the present the Rural Californian has been published as a monthly, and it is one of the oldest magazines dealing with rural life on the Pacific Coast. A few years ago it was purchased by the Cultivator Publishing Co., and has since been issued by practically the same force as engage in the production of the California Cultivator. The business manager has decided that greater usefulness may be secured by merging these two papers and giving to advertisers the benefit of the greater combined circulation, which now aggregates nearly 25,000 papers every week, and to subscribers the benefit of the centering of our energies in the one paper.

The June issue of the Rural Californian is the last one of that magazine to appear. Beginning with this number, the first in July of the combined papers, Rural Californian subscribers will have their subscriptions continued for the unexpired term. Those who were subscribers to both papers will have their time extended.

All the features which have been helpful in the California Cultivator will, of course, be continued. In addition, some which have proven so popular with subscribers of the Rural Californian will be taken up, and, as soon as arrangements can be completed, the household and other departments will carry on some of these favorite features; for instance, in the household department, announcement will later be made of contests for recipes, menus, etc., and we hope to give in one issue of each month a page to prize photographs of home life on the Pacific Coast. More definite announcement will be made in later issues.

In addition we ask our subscribers to send in suggestions or requests for any line of cultural information desired. This office does not possess all information, but it is in touch with specialists in practically all lines, and it will act as a clearing house through which the experience of others will be gathered in and passed on.

Only during the past week have we been called upon by a subscriber in far away Syria sending flowers of Citrus Medica infested with some insect. How shall he treat it? The problem has been passed on to entomologists and as yet we have no definite treatment suggested, but it will be secured. Another, near Bombay, recently asked as to fertilizing citrus trees. Another, in New Zealand, is using the Cultivator forces in securing for him a complete agricultural library. A letter is just opened from a Greek farmer on the island of Cyprus. He wishes to know all about maize, and as to whether it is harvested the same as wheat and beans are. South Africa and Australia often come for information and with information. And so on around the world the Cultivator goes, always serving. We wish to make its service greater, especially up and down the Pacific Coast, where the problems are many and apparently increasing day by day.

One of these problems, hardly months old yet, is the matter of home canning. It is of vital interest to many, especially many members of the Rural Californian family. This number gives material help along this line and from those who know.

INITIATIVE MEASURES

There have been many who were skeptical as to the real value of the initiative and referendum. They have said that it is contrary to the republican form of government and will not result in securing the best for all the people, and especially has it been charged that the rabble, influenced by prejudice, would act unwisely. The number of initiative measures which will be brought before the people at the next general election is giving these people opportunity to say, "I told you so." Sure it is, the testing time is here. Will the people have wisdom to meet the test or will they lose these features which we believe mean much to the future welfare of this state? Especially may we refer to the eight hour initiative measure which has startled the producers of the state until they are discussing possibilities of their remaining in business should that or any similar measure ever pass. Strangest of all, one farmers' organization of the state has committed itself to this measure and excuses its action because of the mental reservation which the members say they have made as to how the law shall be enforced. This eight hour bill was presented by the only socialist member in our state legislature; it was overwhelmingly defeated, then it invoked the initiative. As only "eight per cent of all the votes cast for all candidates for governor at the next preceding general election at which a governor was elected, proposing a law set forth in full in said petition," is sufficient to force this matter to a vote of all the people, it may be seen how easy it is to start something under our constitution as it stands today. Whether this per cent should be made greater or not is a long question, but surely those who would see the best institutions of our state preserved must work from this day until election day that this measure, which is so dangerous to the best interests of the producers of the state, may be defeated.

As no law which is initiated by the people is subject to the veto power of the governor, action of the electors is final and immediate, for within five days after the final declaration of the vote by the secretary of state the law becomes operative.

A most able presentation of the effect of this eight hour law—if it becomes one—has been given to our readers by Mr. Hecke and others, and we do not stop to discuss it here, but call attention to other points regarding it on page 10 of this issue. In addition we will say that an article as to what the initiative is, written by Attorney E. L. Payne for Cultivator readers, will appear in our next issue.

Agricultural News Notes

"Fully 50 per cent short" is the report as to Florida's spring and summer pineapple crop. Shortage was caused by heavy spring frosts.

A country life conference is announced for the last week in July by the college of agriculture of the University of Minnesota. The conference is to be held at the university farm.

According to the census of 1911, there were 2,594,179 cows in Canada last year. This was an increase of 185,502 as compared with the census of 1901. The increase was all in the western provinces.

Farmers in the country about St. Louis have perfected a cooperative business exchange which does business for producers of both Missouri and Illinois, both in marketing and purchasing supplies.

Recently a movement has been started in Paris to bring about regulation of letter postage among the American, French and British governments to two cents in the interests of commerce and general intercourse.

A London engineer claims to have discovered a method by which light may be transmitted by wire. At the receiver the object before the transmitter is reproduced as a flickering image. The invention is called the "televista."

Nine hundred million bushels of wheat, almost half of the average world's wheat production, and a new record for the United States, is the prospective total yield of the farms of the country this year, the department of agriculture has announced in its June crop report.

Wool producers and manufacturers met in conference in Washington June 4, at the call of Secretary Houston of the department of agriculture. The object of the conference was to discuss methods of raising the grade of American wools. It is hoped that a system of standardization will later be reached.

On the Pennsylvania railroad, by a recent order, whenever passenger coaches are crowded, a train man must announce the number of seats available in other coaches, and must tell the number of seats available in each coach. Special care must be exercised at the larger terminals where passengers are liable to be inconvenienced by the congestion of travel.

Under the old method of ventilating the tunnels of the underground railways in London, the air was withdrawn by means of an exhaust fan. By the device now being installed at the new embankment station, constant supplies of air will be pumped into the tunnels throughout the day and night. Ordinary air is passed through a washing screen which extracts the impurities, the requisite humidity is next imparted, a proportion of ozone added, and it is then sent into the stations at the rate of 25,000 cubic feet per minute.

There are said to be nearly or quite 1000 varieties of rice in the Philippine Islands. It is probable that some of these will prove nearly duplicates, but the actual number of varieties is very great. The bureau of agriculture has been carrying on work looking toward finding out the best dozen or so varieties from this great number and progress enough has been made to make it certain that if the work is continued it will be possible within one or two years more to send out these chosen varieties and thus make possible an increase of from 10 to 20 per cent in the rice crop of the islands.

Agricultural News Notes of the Pacific Coast

Northern California

Dairyville, Tehama County, is to install an alfalfa meal mill.

Some almond growers have already contracted Nonpareils at 17 cents.

The creamery at Woodbridge, San Joaquin County, is being remodeled.

The hop crop, it is estimated, will be from one-half to three-fourths of a normal yield this year.

Hop vines at Chico, Butte County, have been seriously damaged by an attack of army worms.

The new cheese factory at Dairyville in Tehama County will start operations the first of this month.

The South San Joaquin Irrigation District has voted an assessment of $140,000 to complete its irrigation system.

It is stated that at least 45,000 olive trees have been planted this season in the district about Oroville, Butte County.

Cloverdale's semi-annual wool sale the middle of June brought good prices, the average for short wool was 31 cents a pound.

The Holstein Friesian Association of America has appropriated $5000 to maintain a show herd at the Panama Pacific Exposition.

Yolo County farmers are finding dynamite an effective remedy against ground squirrels, a fourth of a stick being fired in each hole.

Alameda has organized a farm bureau and is taking every step for the employment of a farm adviser as soon as one may be secured.

Long Valley in Mendocino County reports hops giving exceptional promise for a big crop; much new acreage has been planted this year.

The poultry club of the high school at Ferndale, Humboldt County, has entered into a contest which will last until the time of the Ferndale fair.

Newcastle, Placer County, has shipped up to June 10, 45 cars of fresh fruit, which is largely in excess of last year's shipments at same date.

Farmers in the lower end of the Sacramento Valley are beginning to realize the extent to which the walnut industry may develop for that section.

Sacramento reports the largest shipment of ripe apricots ever passing through that market. More than 800 cars have been shipped to date and less than 400 were shipped the same date last year.

Experimental planting of rice has been made on red soil of the Honcut region of Butte County. It is thought that the rice on this soil will be ready for harvest earlier than rice grown on adobe soil.

Mt. Lassen, one of the higher peaks in California, located in Shasta County, has been causing consternation to many living near it because of eruptions from an ancient crater, which has been inactive for 200 years.

A cow-testing association has been formed at Woodland, Yolo County. Twenty dairymen are members and something over 600 cows will be tested regularly. Officers are: C. R. Hoppin, president; A. B. Welch, vice-president, and H. K. Brown, secretary-treasurer. H. D. Cameron was employed as official tester.

Central California

Tulare County is now making heavy shipments of apricots.

The warm weather is speeding up work on the apricot orchards.

Kings County estimates its wheat and barley crop at 1,680,000 sacks.

Another grafting of walnuts on oak experiment is being tried in Tuolumne County.

Automobile owners are improving the opportunity of using the Wawona road into Yosemite Valley.

The annual gathering and election of the Strathmore Citrus Association has been deferred until September.

Directors of the Fresno district fair are making special offers to secure exhibits of cattle at the coming fair.

Many growers are reported holding their peaches to make into dried fruit, as green fruit prices have not been satisfactory.

The horticultural commission of Fresno County will make an exhibit of insect pests at this fall's Fresno County fair.

The Commercial Club of Fresno is starting a campaign to have an experiment station and farm established at Kearney Park.

The sugar beet factory at Visalia began slicing the first of July. Many growers are considering signing up long-term contracts.

Melon growers of Exeter, Tulare County, are talking up a plan for cooperating with the Dinuba Melon Growers' Association.

Fresh grape shippers of Central California recently met at Fresno and discussed methods of securing a standardized raisin pack.

Some boosters have estimated that the total output of the farms of California this year will aggregate not far from half a billion dollars.

The state hospital at Stockton is to have a new dairy. Twelve thousand dollars has been appropriated for the purchase of a herd of Holsteins.

Some dairymen near San Jose have found serious results from feeding cattle baled alfalfa in which small pieces of baling wire were found.

Grain sections of Tulare County are pleased "because the good old days are here again" and immense quantities of grain are being delivered at the packing houses.

Fumigation has been given some severe tests with a new citrus pest, Coccus citricola, in Tulare County. It is now thought successful work will be done against this scale.

Tulare County fruit growing sections report Bartlett pears at $50 a ton, canning apricots at $40 a ton and canning peaches anywhere from $17.50 to $32.50 per ton.

Fruit growers of Watsonville, Santa Cruz County recently met and conferred with the agent of the Northwestern Fruit Exchange regarding disposal of the coming season's apples.

The Dinuba Melon Growers' Association has elected officers for the coming year as follows: President, Charles Dewhirst; secretary, R. C. Dudney; directors, C. B. Driver, Abner Fraser, W. Winrod, Charles Dewhirst and R. C. Dudney.

Southern California

The cannery at Hemet, Riverside County, started on June 15.

Hemet reports its apricot crop as practically the same as one year ago.

Rialto — Bloomington sections are planning a persistent fight on scale pests.

Neighbours, Riverside County, is concerned as to cotton gin capacity to handle its immense crop.

Ventura County is busily organizing a county farm bureau in preparation for farm adviser work.

The Covina Valley Farmers' Club recently met and discussed matters of interest regarding the coming elections.

Lima bean growers of Ventura County will meet at Oxnard on Tuesday afternoon, July 14th, in annual session.

An agent of the trust-busters of the government is investigating marketing conditions in the melon section of the Imperial Valley.

The Colorado river has been on its usual June rampage, but is now lowering slowly. Serious damage resulted in some sections.

The Imperial Valley hog producers have organized the Hog Raisers' Association. An effort will be made to improve conditions in the valley.

The Cucamonga Foothill Orange Growers' Association is discussing the erection of a new packing house on the line of the Pacific Electric railway.

Some cantaloupes are reported as arriving in market in very poor condition, but as a rule we believe the Imperial Valley has been careful in its shipping.

Puente, in Los Angeles County, is shipping between 1200 and 1500 crates daily of strawberries, blackberries, gooseberries, loganberries and raspberries.

The sugar beet factories of Southern California will all start earlier this season than ever before. It is thought they will be in operation by July 10 or 15 at latest.

Various booster and beautifying committees of Los Angeles County are arranging to meet in Covina and give new impetus to the clean-up and planting campaign for 1915.

Imperial Valley irrigation people are making an effort to have congress aid in securing permanent control of the Colorado river. The river is falling and this year's crisis is passed.

The rights of the Chucawalla Irrigation Company to dam sites on the Colorado river have been forfeited. The company was unable to secure confirmation of its rights by the government.

The recent meeting of citrus growers of Rialto and Bloomington sections discussed fumigation, and a committee was appointed to look over various divisions and districts and investigate as to cost of fumigation supplies.

Ventura County now has a fully organized farm bureau. The newly elected officers are: President, Thomas A. Rice of Oxnard; vice-president, Wm. Arniel of Camarillo, with four directors-at-large, T. G. Gabbert of Ventura, A. C. Hardison of Santa Paula, Charles Donlon of Oxnard and E. S. Thatcher of Nordhoff.

The Coast

Apricot growers of western Washington are finding exceedingly light crop because of late frosts.

The college of agriculture of Washington held its second rural life conference at Pullman, June 30th to July 2nd.

The cattle shipments from Yavapai County, Arizona, will total 5000 head and will bring producers a million dollars.

Grain threshers will start on the harvest immediately after the fourth in the district about Connell, Washington.

The Fruit Protective League of Opportunity, Washington, recently called out all the members to fight fire blight in the orchards of two members.

The North Pacific Fruit Distributors claim they will control 65 per cent of the fruit crop of Oregon, Washington and Idaho during the fruit season of 1914.

Washington is now supplying sufficient local potatoes to its markets and orders for California "news" have been reduced almost to the vanishing point.

The agronomist of the Utah experiment station reports after a tour covering much of the state that this year's crops in Utah will be greater than ever, or at least above normal.

The agricultural experiment station at Pullman, Washington, is establishing an arboretum in which it is proposed to grow a group of each of the important timber trees of the temperate zone.

Arrests of grocers are being made at North Yakima, Washington, because of selling strawberries and small fruits in containers that do not follow specifications laid down in a recent enactment.

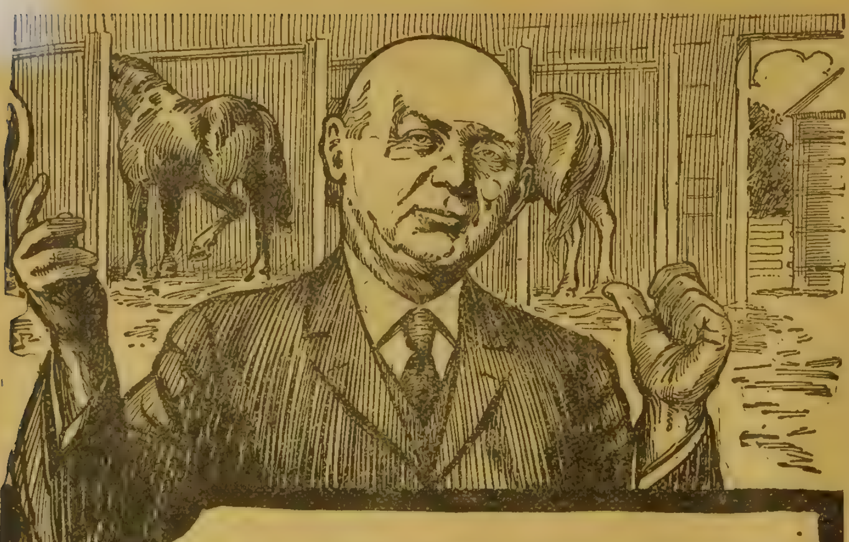
The cherry producing section of western Oregon and Washington reports active market, and with California cherries lessening in quantity, opportunity for the disposal of the northern grown fruit is improving.

Poultrymen of Washington, Oregon and Idaho are uniting in demand on the governors of those states for regulation of the Chinese egg trade, one feature of which will be the announcement that the eggs are produced in China.

Besides liberal cash premiums, the Northwest Live Stock Association, which will hold a live stock show at Rosalia, Washington, will conduct an auction at which it is expected long prices will be secured for all stock exhibited.

The city of Tacoma, Washington, has entered into a cooperative agreement with the forest service for the protection of the source of its water supply, the watershed of the Green river, which lies within the Rainier national forest.

A combination of fruit growers in the Willamette, Rogue River and Columbia River valleys has been effected to cooperate in cultivating, harvesting, packing, shipping and marketing. The organization will be incorporated as the Western Oregon Fruit Distributors and will market through the North Pacific Fruit Distributors.



Avoid the Dangers of Stall Feeding

DR. GILBERT HESS,
Doctor of Veterinary Science
Doctor of Medicine

I want to warn you in time that stock taken off pasture and put on dry feed are pretty apt to get out of fix, because corn, grain, hay and fodder do not contain the laxatives so abundantly supplied in grass.

Some of your animals are sure to become constipated, others off feed, rough in the hair, with paleness of the eyes, lips and nostrils, or the legs may stock or dropsical swellings of the abdomen appear, or the urine may become yellow and thick; but the common ailment of all, especially among hogs, is worms, worms.

Dr. Hess Stock Tonic

Makes Stock Healthy. Expels Worms.

Being both a doctor of medicine and a veterinary scientist, I formulated Dr. Hess Stock Tonic to correct these evils. It contains a laxative substitute for grass, diuretics to remove dropsical swellings, tonics to improve the appetite and increase digestion and vermifuges to expel worms.

So sure am I that Dr. Hess Stock Tonic will put your animals in a thriving condition, the ailing ones healthy and expel the worms, that I have authorized your nearest dealer to supply you with enough for your stock, and if it does not do what I claim, return the empty packages and get your money back.

Right now is the time to feed Dr. Hess Stock Tonic, because it's the cow in the pink of condition that fills the milk pail, the steer with an appetite that lays on fat, the horse that digests its dinner that pulls on the bit, the hog that is well and worm-free that gets to be a 200-pounder in six months.

Dr. Hess Stock Tonic is never sold by peddlers—only reliable dealers; I save you peddler's salary and expenses, as these prices prove: 25-lb. pail $2.25; 100-lb. sack $7.00. Smaller packages in proportion.

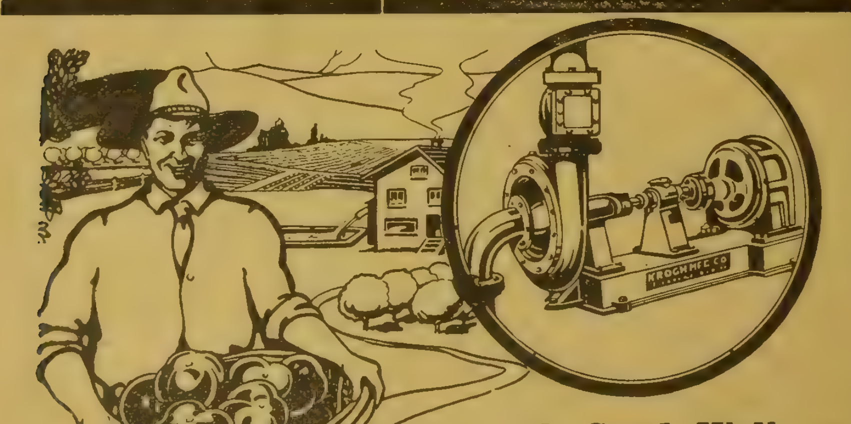
DR. HESS & CLARK, Ashland, Ohio

Dr. Hess Poultry Pan-a-ce-a

A splendid poultry tonic that shortens the moulting period. It gives the moulting hen vitality to force out the old quills, grow new feathers and get back on the job laying eggs all winter. It tones up the dormant egg organs and makes hens lay. Also helps chicks grow. Economical to use—a penny's worth is enough for 30 fowl per day. 1½ lbs. 35c; 5 lbs. 85c; 25-lb. pail $3.50. Guaranteed.

Dr. Hess Instant Louse Killer

Kills Lice on poultry and all farm stock. Dust the hens and chicks with it, sprinkle it on the roosts, in the cracks or keep it in the dust baths, the hens will distribute it. Also destroys bugs on cucumber, squash and melon vines, cabbage worms, etc., slugs on rose bushes, etc. Comes in handy sifting-top cans, 1 lb. 35c, 3 lbs. 85c. I guarantee it.



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Live Stock and Dairy

REAL COOPERATION IN DAIRYING

Written for the California Cultivator
By Leroy Anderson.

Three dairymen of Los Molinos, Tehama County, are to be credited with originating a novel and helpful scheme of cooperation. Each one has a 20-acre ranch a few miles north of Dairyville in the Los Molinos project. I am inclined to think that Chas. Pramme is the father of the idea. He was a marine engineer before he turned to ranching three years ago and now he is president of the Dairyville Producers Association. The three neighbors have owned a pure-bred Holstein bull in common for some time. Mr. Pramme keeps the bull and the others pay him for their share of the feed, while he has the manure to pay for the care. This may have given the cue to further cooperation, but there were other motives. Mr. Pramme built a barn large enough to hold 30 cows—he has less than 10. He began building a silo and purchased a gas engine and silage cutter at a cost of $600. He has a milking machine run by the same engine. This same equipment will do the work for three ranches, so why not come together? The result of thinking was cooperation on June 1st and it is "going splendidly," as Mr. Pramme writes.

The plan is simple—each one furnishes the same number of cows and the same acreage to produce feed and an equal amount of labor. The cows are kept on the place where the barn is and are fed either in stable or corral. They expect to do the milking in about one hour—one man attends the machine, one strips after the milker and the third separates the cream. Each one pays Mr. Pramme interest on his investment in machinery and equipment, and the profits are divided equally. The manure is shared equally. This looks like a mighty good scheme for the small ranchers and Cultivator readers will hear more about it later.

"THINKING HOG"

Written for the California Cultivator
By Sacramento Valley Contributor.

We wonder if ever anyone has made a big success of the hog business who does not enjoy watching his hogs eat and who does not "keep an eye" on them whenever opportunity offers. Personal attention and a liking for the business are prominent factors of success—and this certainly applies to the business of raising and marketing hogs.

There are many things that a good hog grower is interested in that he can find out only by being "on the job" and watching his animals.

Do the hogs eat up their feed clean and are they "keen" for their feed? Does the feed they are getting agree with them? Are they making all the gain they should? Is their hair and skin in good condition? Is the excrement of the proper consistency or is it to too hard, indicating feverish intestines or too little green feed in the ration, or the need of a laxative—or too loose, indicating a disordered condition of the alimentary canal and fermentation from some source? Would a little oil meal added to the ration help the other feed to do better work Would soaking the grain make it more palatable, a little more bulky and a little less liable to pass through the alimentary tract whole? Should the hogs have more green feed? Why are some of them scratching—will it pay to build a dipping tank, or shall they be run in a close pen and sprinkled with sheep dip and some oil to kill the lice that are getting a part of the profits? Are some of the pigs too "cat hammed" and just what kind of a boar should be mated with them to make the needed improvement?

All of these things and many more can be solved satisfactorily only by the man who thinks "hog" and who is where the hogs are while he observes the things that are "fundamental details."

SORGHUM GRAINS FOR PIGS

A very instructive experiment in pig feeding, under the supervision of Prof. F. W. Wilson, animal husbandman of the University of Arizona Agricultural Experiment Station, was recently completed, using feeds grown in Arizona. Four lots of four-months-old pigs, equal in weight and condition, were selected and fed as follows:

Lot 1—Chopped alfalfa straight.
Lot 2—Milo maize heads.
Lot 3—Chopped alfalfa and milo maize heads combined in a balanced ration.
Lot 4—Chopped alfalfa, milo maize heads and barley.

Somewhat to our surprise, not only the largest, but the cheapest gains per pound, were made by the lot fed on straight milo maize. This appears to be a substitute, under our conditions, for corn as used in Kansas for pork production. In as much as milo maize is much better suited to the climate of the region and is also more productive in grain than corn, it would seem to point the way to profitable hog feeding operations here. Kaffir corn or feterita have practically the same feeding value and may be used instead of milo.

Veterinary

Answers in this column by Dr. Wm. Petrie, 2714 South Harvard Blvd., Los Angeles, are without charge. For immediate mail answer remit $1.00. In writing questions give full symptoms or particulars of injury of animal.

Growth on Jaw

I have a cow that has a small bone-like growth on her right lower jaw. It seems like hard gristle and is a little tender. The growth is lengthwise of the jawbone, but sticks straight out an half inch and is an half inch in diameter. If you know what it is, please give remedy.—Subscriber, Lompoc.

The growth may have been caused by a slight injury. If so there probably is pus in it. The skin of a cow is very thick and pus will not rot its way through as in most animals. So you had better open it and if you find pus, clean out the cavity and inject a solution of permanganate of potash: half a dram to the pint of water. If you find no pus then it may be lump jaw. In that case the lump will continue to grow. If it does grow larger and you conclude that it is lump jaw then use the treatment recommended for that disease in the Cultivator of June 4th on page 690.

Itchy Skin

Will you please advise me respecting my colt 10 weeks old. He is rubbing himself against the fence and biting at places on his body. There are no places where the hair is off. I have put food tonic in his grain, but he eats very little of it. Would it be safe to clip him and rub something on him? His hair is rather long on his body.—Subscriber, Modesto.

Yes, it will be perfectly safe to clip the colt and will probably do him good. The irritation may be caused by lice and whether it is or not it will do him good to wash him all over with a solution of sheep dip. Use a teacup of the sheep dip in a bucket of warm water. Repeat the wash in a week and you will probably see good results.

Worms

Will you kindly advise me through the columns of the Cultivator what remedy to use for the cure of white worms in horses — Subscriber, Orangehurst.

The long round worms infest the

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A Forage Plant That Will Yield More Than Alfalfa

And unlike alfalfa, this new forage plant will thrive in arid and semi-arid regions without irrigation; yielding about four times the food value in forage per acre as alfalfa. We refer to the Luther Burbank pedigreed Spineless Cactus, which has rightly been termed the "miracle plant."

A farm has been established near Riverside, California, for growing Cactus Slabs of the Luther Burbank pedigreed varieties for planting. These slabs are sold in large or small quantities. A request to the El Campo Investment & Land Company, 211 Story Building, Los Angeles, will bring you free an instructive Folder on Cactus Culture.

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Prices right.
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stomach and bowels. Have the following prepared by a druggist and give as directed: Powdered gentian, three ounces; areca nut, one ounce; dry sulphate of iron, one ounce; nux vomica, one ounce, and fenugreec, three ounces. Mix and make 30 powders. Give one morning and evening. At the end of one week give one ounce of spirits of turpentine in half a pint of raw linseed oil and repeat the oil and turpentine again when the powders are all used. Another good old-fashioned remedy for stomach worms is salt and wood ashes. Mix one part of ashes with three parts of salt and give a small tablespoonful once a day.

Spavin

I have a four-year-old mare that was kicked on the hock joint about three months ago. There was considerable swelling at first and she was quite lame. In about a month the swelling was all gone and she was apparently entirely over her lameness. I put her at light work and she appeared all right for three or four days, but all at once she went very lame. I turned her out and in a few days she seemed all right again. After a few more days' work she became lame again. Thus it has gone on for two months. There is absolutely no swelling or soreness. What is it?—Subscriber, Forestville.

Probably there is some inflammation left in the bones of the hock caused by the injury and may finally develop into a spavin if nothing is done for it. A good blister on the inside of the hock may reduce the inflammation and prevent a spavin. Avoid giving her hard work or using her on hard roads until after you have applied two or three blisters.

Open Salivary Duct

About six weeks ago I had a valuable horse develop a swelling in his throat and left side of jaw. It grew gradually worse until I called a veterinarian and he pronounced it strangles. He blistered the throat and jaws twice about three days apart. He then poulticed it. Several pints of foul matter was removed, including barley beards, so he concluded it was barley beards that caused the trouble and not strangles. The wound, which was about as large as the crown of a hat, has about healed over, but the duct carrying the saliva to the mouth makes its discharge at the wound. When I feed the horse, especially grain, the saliva spurts out of his wound in a stream as large as a straw. When the horse is through eating the flow ceases.—Subscriber.

If the duct is only open on the side, your veterinarian may be able to close it by scraping the edges, putting a stitch in and covering the wound with collodion. But if the duct is completely severed then you will probably have to entirely destroy the gland. This can be done by injecting a strong solution of nitrate of silver or a strong tincture of iodine, but the surest way to make a complete job of it is to remove the gland. This operation would have to be done by a veterinarian who knows his business.

Sore Teats

We have a cow whose nipples crack all the time. She has a calf and we let it suck two of the nipples. I put salve on, but it does not seem to help. Every year she has this trouble. Please advise us what to do.—Subscriber, Fowler.

Sometimes it is a difficult matter to heal sore teats while the cow is milking, but it can be done. After milking wash the teats clean with warm water and dry them carefully. Then apply an antiseptic lotion. Use bichloride of mercury and water one to one thousand. You can get the tablets of your druggist and put one in a pint bottle and fill it with water. After the lotion has been applied a few minutes anoint the teats with oxide of zinc ointment, which your druggist can also supply. If the ointment is too hard, warm it a little before using and it will not hurt it if you add a little olive oil to it while it is warm to keep it soft. After a few treatments you will only have to wash the teats and apply the ointment after milking.

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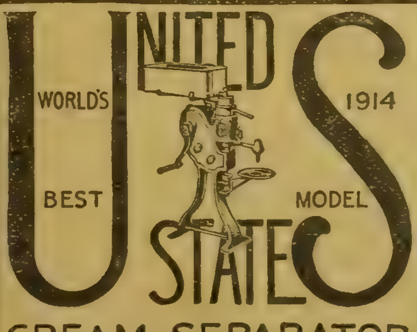

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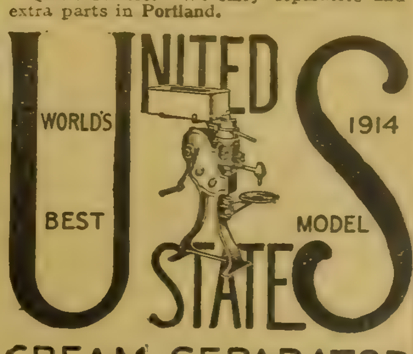

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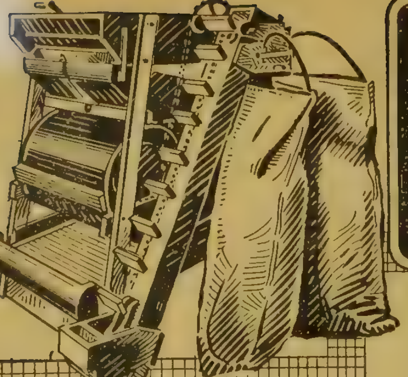

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The Ornamental Garden

THIS MONTH IN SOUTHERN CALIFORNIA

Written for the California Cultivator
By O. M. Morris.

The warm, dry season of midsummer is not generally conceded to be a favorable planting time, in fact, many consider it quite the contrary. Notwithstanding this, most of the annuals may be planted during this month for fall and early winter blooming, requiring only a little extra care in the preparation of the seedbed and protection of the young plants. Seedbeds should be shaded with lath or a brush covering or the more hardy plants may be covered with a good mulch. Among good fall bloomers are the annual chrysanthemums, gypsophila elegans, cosmos, candytuft, centaureas, clarkias, dianthus, godetias, larkspur, linum, marigold, mignonette, pansies, stocks, phlox, petunias, salpiglossis, schizanthus, zinnias, wallflowers, winter flowering sweet peas, cornflowers, etc. Most of the annuals bloom in about three months.

For spring blooming perennals and biennials this is the best season for seeding. The list of these includes campanulas, delphiniums, antirrhinums, snapdragons, calendulas, gaillardias, carnations, dahlias, gypsophila paniculata, hollyhocks, mimulus, nasturtiums, penstemons, petunias, verbenas, English daisies, coreopsis, digitalis, hunnemania, scabiosa, salvia, statice and many others.

For shady nooks there are cinerarias, cyclamen, begonias, heliotrope, primulas, torenia, vinca, gerbera, lobelia.

The list of the most popular winter flowering plants includes stocks, pansies and sweet peas. Of the stocks the early large flowering requires nearly four months to bloom, pansies will bloom in four to five months. The winter flowering sweet peas require three to four months, according to variety. For spring flowering pansies plant in August, but use care in shading the seedbed. For this purpose burlap is an excellent material.

PLANT FLOWERS EVERYWHERE.

Every farm home is so easily and inexpensively made a place of beauty by planting flowers all about it that it seems strange there should be a single country home tnat is not embowered in greenery and blossoms. They should be planted everywhere, and with little care and attention will yield such a wealth of growth and bloom as will transform the most unsightly places into objects of beauty. If you have little time to give to their care and cultivation, plant only the most common hardy sorts that bloom profusely, petunias, nasturtiums, portulaca, poppies, pansies and asters and morning glories, scarlet runners and the wild cucumber for screen and shade. A flower garden and set beds are not necessary. Indeed, to plant flowers in nooks and corners here and there and to grow vines for screens and shade will be productive of more beauty and pleasure. Have the children put some seeds in here and there that are to be their special care, and so begin training the desire to help to make the home attractive.

Plant flowers everywhere.

Small Fruits and Vegetables

THIS MONTH IN SOUTHERN CALIFORNIA

Written for the California Cultivator
By O. M. Morris.

In the vegetable garden as in the flower garden a little extra care is requisite at this season to insure successful crops. In preparing the soil it should first be made thoroughly wet, then worked up as soon as possible and the seed planted at once while the ground is in good condition. Any of the following may be planted with a reasonable assurance of success: Beans, corn, pumpkins, onions, cabbage, lettuce (Iceberg), beets, cauliflower, turnips, summer squash, Brussel sprouts, kohlrabi, carrot, salsify, endive and many others. For early winter vegetables plant peppers, tomatoes and egg plant.

Onions planted at this time will mature a crop in early February or March; cabbage and cauliflower, according to variety, in four and a half to six months; beets and carrots, three to four months. Plant potatoes for fall and winter crop. Practically all of last winter's crop of seed is exhausted. Use care in the selection of seed for the spring crop. Plant only that which is thoroughly cured and which shows swollen eyes. A larger piece containing more eyes is necessary at this season than for spring planting.

REMEDY FOR APHIS.

We note in the Turlock Journal a melon grower has discovered a new remedy for melon aphis. He used ten pounds of eucalyptus leaves and boiled them for some time in about five gallons of water. This solution he sprayed over the vines and says he is not troubled in any way with melon aphis. He is now spraying seven acres and finding good results.

The success of the experiment, says Mr. Cole, was most satisfactory, and now after losing seven acres of melon vines by the depredations of the aphis, he has not an aphis on his place. The eucalyptus solution has entirely destroyed them.

"The simplicity of the remedy and its very small cost will make it worth trying by every melon grower who is troubled with aphids on his vines. Another recommendation in favor of this new remedy is the fact that it is not necessary for the solution to come in contact with the aphids, as the odor of the eucalyptus oil, which is extracted from the leaves by boiling and which forms the vital part of the solution, is retained by the soil under the plants sprayed, and is death to the aphids immediately. The solution does not injure the vines in the least, and more speed can be made in treating them, as it is not necessary to exercise so much care in seeing that the spray reaches the aphids directly, the odor doing the work just as effectively."

The bran-arsenic mash is a sure cure for grasshoppers. It is made up as follows: White arsenic, one pound; brown sugar, two pounds, and bran, six pounds. First mix it thoroughly dry and then add enough water to make it a stiff, wet mash. A tablespoon of this should be placed near the bottom of every tree or shrub to be protected.

Let your neighbors know that you are in earnest about doing your part in building up the community. When they find out you mean what you say and do what you can they are apt to join you and the work will be easy. One trouble is that each of us wants the other to cooperate, but when the time comes for us to act we hesitate.

We have frequently noticed that farm life offers an opportunity for the development of a kindly spirit of charity and brotherly kindness which is the best possible example of the right sort of living.

It doesn't cost much to be neighborly, and if you learn to enjoy it, it is worth more to yourself than to anybody else. It is only the running brooklet that sings and seems to be happy.

Profit in the Poultry Yard

PANAMA-PACIFIC EXPOSITION EGG LAYING CONTEST

By I. D. Graham, Assistant Chief, Department of Live Stock.

Among all of our domestic animals and fowls there is perhaps nothing of real worth to humanity that comes more closely in contact with man to his profit than does the helpful hen.

Useful for food and as a producer of food; able to care for herself and yet responding to human attention as do few other living things; gathering the waste products and destroying our insect enemies, the hen is at once a conserver and a producer of wealth and her daily tribute is an important item in our agricultural prosperity.

The hen is the creator of approximately $600,000,000 of new wealth each year in this country and is a potent factor in the economy of all countries. In the planning of the great International Exposition, in which education is the chief motif, it is only proper that she should receive prominent consideration.

One of the chief features of the great poultry show to be held in connection with the Panama-Pacific International Exposition, as planned by Chief D. O. Lively of the department of live stock, will be the international egg laying contest, which will begin on November 1, 1914, and continue for 12 full months. This contest will be conducted by the department of live stock and under the supervision of the poultry division of the College of Agriculture of the University of California, thus giving it the most expert supervision as well as placing it under a recognized authority.

The contesting pens will each be composed of 10 females of the same variety in which the birds must be at least eight months old and not more than 11 months old on the opening day of the contest. The competition will be open to the world and all birds will be housed and fed alike.

Diseased birds will not be received and those which develop disease or vicious habits must be replaced with others of the same age and variety by the owner. Every care will be given the birds in the matter of feed and attention and every precaution taken against loss by disease or otherwise, but no responsibility for losses will be assumed by either party in charge of the contest.

Prizes will be awarded on performance and the total number of marketable eggs produced by each pen will be the basis of award. The owner of the pen making the highest annual egg record will receive a trophy and $75 in gold; the second prize will be a trophy and $50 in gold; the third prize a trophy and $25 in gold, and the fourth prize $10 in gold. The leading pen in each variety will be awarded a medal and $10 in gold.

The owner of the hen making the highest individual record will be awarded a trophy and $15 in gold; second prize, $10 and a third prize, $5. The owner of each hen making a record of over 200 eggs will be awarded an exposition trophy. Trophies will be awarded each month to the pen making the highest record for that month.

Not less than three pens must be shown in order that a variety may be represented in the contest in competition for special variety prizes. In case there are less than three entries in any one variety pens may compete in other classes where eligible. All entries will be booked in the order in which they are received and all entries will close on October 15, 1914.

All pens will be numbered and the records credited to these numbers. The name and address of the owner may appear upon the pen and in the records if desired. This will be done only upon the expressed wish of the owner, as this provision is made for the protection of those owners whose birds fail to make a creditable record. All birds must have been bred by the exhibitor, who shall be the owner at the time of the contest and who shall have owned the parent birds of the pullets entered and shown.

Any exhibitor who desires may include a male bird in each pen entered in this contest, and he may have the first privilege of securing eggs for his own use from such pen. The right is reserved by the department of live stock to select eggs for hatching purposes from pens which include male birds. A uniform charge of $1.50 per 15 eggs will be made to cover the cost of baskets, packing, shipping, labor, etc. All eggs will be packed in baskets.

All fowls to enter this competition must be shipped, express prepaid, and addressed to the egg laying contest, in care of the president of the Panama-Pacific International Exposition. No fowls will be received for this contest later than October 30, 1914. All shipments of birds properly addressed must be made so as to reach the grounds of the department of live stock of the Panama-Pacific International Exposition not later than October 30, 1914, though they may be received as early as October 1, 1914.

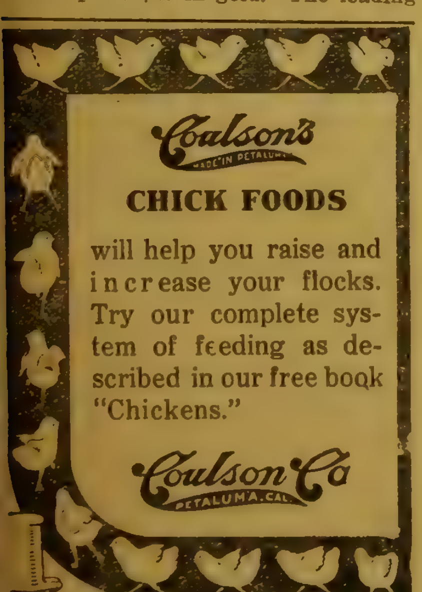
An entry fee of $25 will be required for each pen; check or money order for $10 must accompany the application and the balance of $15 must be paid on or before October 15, 1914. All payments must be made to the Panama-Pacific International Exposition and sent to D. O. Lively, chief of the department of live stock at San Francisco, California.

Hen manure stands at the head of the list in value, except that made by pigeons. Dried pigeon manure runs as high as $30 a ton. Fresh hen manure runs in value according to the feed used from $4 to $10 a ton. Sun-dried manure is worth $5 to $9 a ton, and air-dried $9 to 12 a ton.

Manures, like everything else, may do harm. They can not do harm when ordinary intelligence is employed in the use of them. All manures should be used in moderate quantities, as it is well known that to get the best results from manures they should be applied often and in small quantities.

It should be kept in mind that the best results come from a light coat put evenly on the ground after the plowing has been done, and then well worked into the soil with a disc. Pigeon manure is imported into England from Egypt, and the price reaches about $30 a ton.

The drying would lessen the freight and make the product more easy to handle. The average hen on an average ration produces about ten cents' worth of manure in a year. That will be ten per cent on her price at $1. This is the lowest estimate where hens have been penned and the excrement analyzed.—Missouri Agricultural College.



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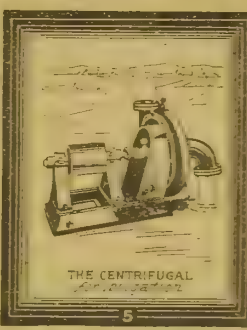

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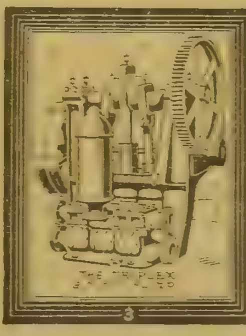

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Questions and Answers

THE EDITOR AND STAFF

Questions to be answered in this department should be received at this office one week before reply is expected. Write plainly on one side of the paper and sign full name and address. Unsigned communications receive no attention.

Water and Sunburn.

You know our walnuts had sunburn last year bad, especially in interior points. An interesting occurrence was mentioned here: while myself and neighbors had sunburn bad enough, one of us was fortunate in being able to put on water. He watered first three or four days before that hot spell began and claims his nuts were very little sunburned. The rest of us began watering early. Can you draw any conclusion from this?—Subscriber, Lordsburg.

When there is ample water in the soil and the soil texture is such that the water can move in it readily, the roots of plants and trees get water more rapidly and so are able to furnish a better supply to the leaves and fruit during a period of excessive heat, which prevents burning of the leaves and fruit. The case you cite illustrates this fact and shows the necessity of always having a plentiful supply of water in the soil during the growing season.

Tomato Blight.

Can you tell me what to do to prevent or cure tomato blight? — Subscriber, Selma.

These questions are coming thicker than ever, and from them and our own garden experience this season we take it the disease is worse than usual. We assume these are cases of the true summer blight, which is not curable. The only treatment is prevention, and efforts along this line must be made before the plant is in the ground. Especial care must be taken to have the soil in which the seed is planted free from the infecting bacteria. Should these bacteria be present in the soil, then the roots are attacked, and the plant after being set out may reach considerable size, even set fruit, before showing the blight. But when it does become apparent by tops wilting, its action is very swift. The whole plant weakens, wilts, fades away and collapses. The disease quickly affects the entire field. When it begins to show, if plants are pulled out and carefully destroyed, its spread may possibly be prevented or at least retarded.

We would advise all tomato growers to write the State Experiment Station at Berkeley and ask for Prof. R. E. Smith's "Tomato Diseases in California," Bulletin 175; also S. S. Rogers' "Culture of Tomatoes in California," Bulletin 239.

Walnuts.

I should appreciate your letting me have your idea of what root stock and variety of walnut we should use in this neighborhood (between Fillmore and Santa Paula)? Have any of the blight resistant varieties been tried out sufficiently so that you would recommend using one of these? I recall distinctly that you were in favor of planting walnuts 60 feet apart. I am thinking of planting 30 feet apart to start with and then when they begin to crowd each other, take out every other tree. Do you believe we will get good results from planting walnut trees on ground which is only eight feet above water? This water—in our case—is moving river water, which I imagine would be quite different from letting the tap root go into a stagnant lake of water. We have walnut trees now about eight years old which are growing on land where the water plane is probably from nine to 12 feet below the surface of the ground. The trees are bearing well and appear to be in good health. Do you believe that these trees will begin to deteriorate later Subscriber, Sespe.

There is no doubt but that the best root for grafting or budding is the native black walnut, as it makes the best root system and is thoroughly acclimated. All my observation leads me to believe that the variety we know as Neff's Prolific walnut is the best for Southern California conditions. This is not as smooth as I would like, but the nuts are above the average size and there is less blight than on any of the so-called immune varieties. I do not have trees for sale.

If you plant closer than 60 feet, simply put a tree in the center of the 60-foot square and not 30 feet apart as you propose. If planted so close they will crowd each other before you get many nuts from them. If your water table is constant at eight feet below the surface there will be no danger from excess of water. The damage comes from a variable water table. This may be low one year and the roots follow down; then a wet year comes and the water rises until the roots are in the water and decay. Moving water is not so dangerous as standing water, but continued oversaturation will damage the trees. Your trees will do well if the water does not rise closer than six feet from the surface at any time, as a very small percentage of the roots go below that depth. You need have no fear of the deterioration of your trees where the water is nine to 12 feet below the surface, if they are kept well pruned, well irrigated and well fertilized.—J. B. N.

Employers' Liability.

I have a man working for me from one to three days in the week, doing general farm work, as hauling, plowing, feeding the hens once in a while and so forth. Am I liable in case of an accident to him under the new liability act? I have heard from different parties that this law does not include farm laborers, while others seem to be of a different opinion, saying that it includes any kind of help. —Subscriber, Arroyo Grande.

You are correct in that the farmer and employer of occasional labor is exempt from the workings of the workmen's compensation law, but on the other hand, that act and the Roseberry act have taken from the employer practically all his legal defences, so that any injury, even to the help of the farmer, gives opportunity for causing serious legal trouble. Therefore many farmers are availing themselves of the provisions of the workmen's compensation act and carrying insurance with private companies or with the state commission. We refer our inquirer to extended discussion of this point in the issues of the Cultivator of March 12 and March 19, this year.

Transplanting Orange Trees.

Is it possible to transplant two-year-old orange trees from nursery to permanent orchard after July 1st, or would it be better to let them remain until next spring? If transplanted after this time would not early cold weather in the fall prove injurious to them?—Subscriber, Springville.

If the ground is in good condition, deeply plowed, with good large holes prepared, and the trees are taken up carefully and handled so that the roots are never allowed to dry at all, we would move at once. They will become established and make considerable growth yet this season, and there is abundant time for this growth to harden before there is any danger from cold weather. We have heard citrus planters say that they care little any more at what season the trees are set out; when they get ready they plant and give heavy irrigation. The greater part of the planting, of course, is done in March, April and May.

Beetles on Budded Valencias.

I have trimmed out my navel trees and budded them over to Valencias. Some of my neighbors tell me that there is a species of beetle which often destroys the new buds. How can I guard against this? Would it not be better to paint the places where the limbs were sawed off from the trees? Subscriber, Orange.

This was referred to Mr. E. O. Essig of the state commission of horticulture, and he answers:

The beetle referred to is evidently the Fuller's rose beetle, and the best method of keeping it from young buds is to put a tanglefoot band around the base of the tree. They cannot fly and anything that prevents them from ascending the trunk is all that is necessary.

Cover Crop.

What can I plant now for cover crop which will stand the hot weather and mature so we can plow it under this fall or prior to the winter rains?—Subscriber, San Bernardino.

We would irrigate the ground as heavily as possible and plant buckwheat. If weather is good and irrigation heavy enough two crops can be raised between now and the rains. Some orchardists have succeeded in maturing buckwheat within eight or nine weeks, disking in, and the seed of the first crop has brought volunteer for the second. See article on this crop in the Cultivator of June 4. Cowpeas are also most excellent and would give greater tonnage than buckwheat if given sufficient water.

Feeding Pheasants.

Please give information as to method of caring for and feeding pheasants. —Subscriber, Santa Paula.

This, like the raising and feeding of poultry, calls for more extended article than can be given here. In a word, we may say that the feeding of young pheasants is about the same as that of young chicks. They should not be fed until after they are 24 hours old, but after the second day feed every two hours. After they are five days old number of feedings may be reduced until they are three weeks old, when they should only be fed three times daily. For first feed heat one quart of sweet milk to boiling point, stir in ten eggs well beaten and cook until curd is done. Turn off whey and this crumbly mass contains all the essential elements to young pheasant life. After that a mixture of milk, eggs and oat or cornmeal in proportion to make dry, crumbly mixture makes a fine feed. Of course boiled potatoes, greens, etc., as for chickens, is demanded. Would advise pheasant raisers to write State Game Farm, Hayward, Cal., and ask for Bulletin 1, "Pheasant Raising."

English Gooseberries

In response to request for information as to English gooseberries in California, Mr. E. C. Hall of Greenfield writes:

"Two kinds of English gooseberries do well at Greenfield, Monterey County. I do not know whether these varieties would do well in Alameda County or not. In parts of the state I am told some varieties mildew. I have tried out over a dozen kinds of gooseberries here and no mildew has yet appeared, and they have been growing here for seven years."

Mulch Under Trees

Will leaving dried weeds and grass under orange trees injure them? — Subscriber, Cucamonga.

If the subscriber means by this the growth that remains from the winter weed crop, we will say that for the sake of securing better condition of the soil we think the ground should be dug up, but once it has been loosened, the piling of weeds, leaves or any other mulch under the trees is beneficial, but do not let hard soil compacted by a season's rains remain without digging up so as to allow the air to reach the roots of the trees.

Care of Turkeys.

My turkeys get droopy when about two weeks old and we feed egg, milk curd and cornbread. They stand around and won't eat, and in a few days they die. What is the ailment and cure?—Subscriber.

The ration is too heavy and lacks the green which turkeys cannot live without. Very likely they have been overfed as well. Most of the turkeys which die under three weeks of age die of overfeeding or wrong feeding. Egg is a doubtful food for very young poults. It is apt to be constipating and should be fed only rarely and then always mixed with green feed. Corn in any form is dangerous. Cut out both the cornbread and the egg and feed cottage cheese, chopped onion and lettuce, very stale bread or rolled oats chopped with the green, and for grain a little steel cut oats or cracked wheat. A teaspoon of cottage cheese, a teaspoon of onion, lettuce and bread chopped together, with a good pinch of steel cut oats and another of fine chick grit makes an ample and satisfactory meal for a dozen turkeys two weeks old. When they are first hatched one heaping teaspoon of the mixture is enough, but it must be fed five times a day. For the first three weeks about half of each meal should be lettuce and onion, and never omit the onion. The turkey's liver is its weak point and onion is the best liver tonic. When turkeys this age once begin to droop it is practically impossible to save them. You can probably save the well ones by changing the ration and giving an extra amount of green for a few days with plenty of grit. For the sick ones you might try a liver pill or a tenth grain of calomel for three nights, with a half grain of quinine the fourth night, but the chances are they will be dead before you are through with the treatment. See to it, of course, that they are free from lice, and in perfectly clean quarters.—J. A. K.

SAVE MONEY on Irrigation Pipe

"AMERICAN" Surface Irrigation Pipe is the most economical pipe to buy. It is made of HEAVIER GALVANIZED SHEET STEEL than any other pipe, and is sold CHEAPER IN PROPORTION to quality and workmanship than any other pipe. It has NO RIVETS to pull out, but is made with the DOUBLE-LOCKED, TURNED AND SOLDERED SEAM, which is the strongest made, and CANNOT LEAK, even though the pipe be SMASHED FLAT. "AMERICAN" pipe will outlast any other and is by far the most ECONOMICAL to buy. Don't buy any irrigation pipe without getting our catalog, which explains fully the GREAT SUPERIORITY of "AMERICAN" Pipe. Remember, also, the service of our IRRIGATION ENGINEERS is FREE.

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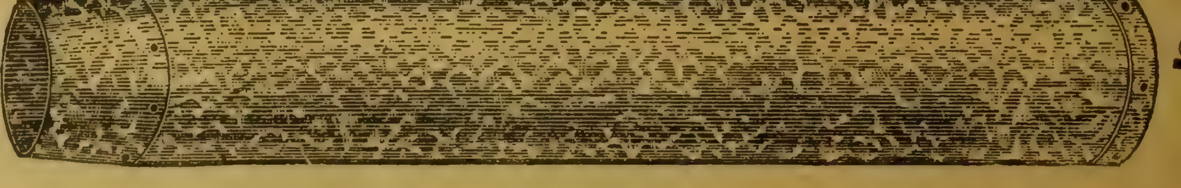

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Legal

Edw. L. Payne, attorney, 301-304 Douglas Building, Los Angeles, will answer legal queries in this department.

Immediate mail replies cannot be given except where fee to Mr. Payne is paid. When replies are wished in Cultivator address query to 115½ N. Broadway, Los Angeles.

Misrepresentation

Is this misrepresenting property and would the court reverse a deal in case of suit: "A" offered to sell 40 acres of alfalfa land, stating, "The land is likewise good for oranges and lemons, the water is very shallow and easy to get, thus a pumping plant completed would not cost more than $1000." "A" also said that if water could not be had at such cost he would give all the water wanted from his own wells. "B" has found that "A" has not enough water to irrigate four acres as it is needed, pumping only about three inches of water, and four other wells have been found by "B,' all within one-fourth of a mile from this land, which are likewise failures and will not be used or completed as the granite formation is too hard to do anything with it. "B" has had water experts, well borers and a geologist to learn as to possibilities of getting water. All of them state: "You cannot get water for less than $5000 and may be never." Now "A" has known of all these conditions.—Subscriber.

If "A" knew that his statements concerning water were false at the time he made them, and if he had no intention of carrying out his agreements concerning the giving of water from his own well and the putting of all his land into alfalfa, then "B," having purchased relying upon said agreements and representations, may, upon discovering the falsity of the agreements and representations of "A," and within a reasonable time after such discovery, rescind his contract to purchase, tender back to "A" the property and demand all that has been paid for the same. Upon the failure of "A" to accept the rescission and pay back to "B" what "B" has invested, "B' has a right of action and may enforce the rescission in court.

Probate of Property in Two States

Where one has real estate and personal property in California and several parcels of real estate in Arizona or other states and wishes to will all to one person, is the situation in any way complicated? Will the probating of the will in one state suffice?—Subscriber.

The above inquiry can be answered only in a general way, as the laws of different states differ in probate matters as well as in others. The property situated in various states can be willed in one document, executed in one of the states, and that phase of the situation presents no difficulty. As part of the property is situated in California, the will would have to be probated in California, although it might have first been probated in some other state. The same is true of Arizona, but there are some states, such as Missouri, where a certified copy of the probate proceedings of any other state can be put of record and will suffice to show the transfer of title from the deceased to the heirs.

Line Fence

I have a half section of land, boundaries defined by corner and line stakes only. There is plenty of good pasture, water, wood and a comfortable cabin, unoccupied. The property has been leased the last two years by an adjoining land owner, whose land is also unfenced. He now refuses to renew lease, saying he is going to take stock out, but fails to do so. Am I compelled to fence against his stock? Should I fence on the line could he turn his stock against my fence, he not having assisted in the fence construction or the survey of the properties?—Subscriber.

To be absolutely safe against stock you should fence your land, as you would have no redress for damage done by stock unless your land is fenced. Should the adjoining owner choose to let his land go unfenced there is no way to compel him to join in the cost of the fence, but should he at any time in the future proceed to fence the balance of his land then you can compel him to pay one-half of the cost of the division fence.

Liability of Stockholder

I own shares in a power company. The company has levied an assessment of $10 per share. Now, in case this is not paid and the shares are sold, does this release me from the company?—Subscriber, Tulare.

The sale of the shares of stock for non-payment of assessments releases the former owner from any future liabilities on account of debts incurred after the sale, but does not release such owner from liability on account of debts incurred by the corporation prior to the sale. He would still be liable for his pro rata share of such debts.

RETRIBUTION.

A Pueblo minister was greatly disturbed by a number of women in his congregation who persistently gossiped in a loud tone during services. One Sunday morning he executed a plan which he had devised to stop this annoyance. At a given signal the choir stopped abruptly on a certain word in the middle of a hymn. Then one of the gossips, unable to check herself, was heard all over the church to say: "I always fry mine in lard." "As we now know," announced the minister, "that she always fries hers in lard, we will proceed with the singing."

NO CHANCE FOR SANDY.

Sandy McTavish was sitting weeping at his fireside.

"Eh, Sandy, mon," said a neighbor, peeping in at the window, attracted by the sounds of woe, "what's ailin' ye?"

"Oh, dear! Oh, dear!" sobbed Sandy. "Donald McPherson's wife is deid."

"Aweel," said the neighbor, "what o' that? She's nae relation o' yours, ye ken."

"I ken she's na," wailed Sandy. "I ken she's no, but it jist seems as if everybody's gettin' a change but me."—Glasgow Herald.

It may not be that all things come to him who waits, but we are quite sure there is something coming to the man whose everlasting habit it is to make us wait, and we'd like to see him get it good and hard.

MONEY MAKING LITTLE LINERS

In this department we will insert your advertisement under a classified head for 11 cents per line per issue. No ad accepted for less than 3 lines. Our classified columns are the clearing house for our many thousand readers.

TREES.

Avocado Tree (Alligator Pears), the most valuable of all trees for California planting and surely the coming fruit industry. Some varieties stand more cold than oranges, grow faster, and require less care. I have several hundred fine, vigorous, field-grown trees of the Harmon variety from four to five feet tall, $3.00 each. Other standard varieties, including Taft, Walker, Ganter, Murietta, of various sizes and prices. W. A. Spinks, Duarte, Cal.

For Sale—Two-year-old Valencias and Navels, ¾ inch and up, not damaged by last year's frost. 300,000 one and two-year sour seed-bed stock. To see this stock is to appreciate its value. Address A. B. Rogers, Glendora, Cal. Home Phone 444.

For Sale—One and two-year-old Washington Navels and Valencia Orange Trees. Eureka Lemons and Marsh seedless grapefruit, for Spring 1914 delivery. Write for prices, or call and examine stock at Morris Citrus Nurseries, Cor. Juanita and Valley Center, R. F. D., Box 34, San Dimas, Cal.

The 1200-Acre Nursery, growers of 1500 varieties of trees and plants. OREGON NURSERY CO., Orenco, Oregon. Sales office, 522 Chamber Commerce, Los Angeles, Cal.

Budded Avocados, all the best varieties, other rare plants, send for Catalog. Special attention given to yard planting. Avocado trees budded over to choice varieties. Semi Tropic Nursery, Monrovia, Cal.

60,000 choice seed bed stock on leased land. Lease expires June 30. This is your chance. Butler's Morning Side Nurseries, P. O. Box 145, Lamanda Park, Cal.

1000 Avocado Seedlings—Pots, also can furnish nice plants, bare root, at low price. A. A. Quint, R. D. No. 2, Pasadena, Cal.

For Sale—Eureka Walnut Trees, budded on Native Black Walnuts. Choice stock. Order immediately. Don't delay. Wm. Holve, Fullerton, Cal.

Citrus Nurseries, Murphy Oil Company, East Whittier, California. Selected stock for sale; inspection invited.

Wholesale Prices—Guavas, 7c; Chamaerops Palms, 5c; Date Palms, 30c; Ferns, 5c. Ballou's Nursery, Pasadena, Cal

BEES AND HONEY

It Pays to keep bees and raise your own honey on the farm. We can supply gentle, Italian bees at reasonable prices any time. Write for our free catalog of bees, instruction books, supplies and fixtures. Spencer Apiaries Co., Box 14, Nordhoff, Cal.

FARM LANDS FOR SALE.

For Sale—

FIRST-CLASS POULTRY RANCHES.

Los Angeles is the best market on the Pacific Coast for poultry products. Local Market Report of the 17th inst., says: "Receipts of Petaluma eggs are still averaging better than a car a day."

WHY SHOULD NOT THIS MARKET BE SUPPLIED BY OUR OWN POULTRYMEN?

At ZELZAH in the San Fernando valley, conditions are ideal for raising chickens, turkeys, fruit and vegetables, and the 5-acre SUBURBAN HOME is a real money-maker.

The Zelzah poultrymen invite you to join them in building up the industry there and will convince you that there is no better location near Los Angeles.

If looking for a location, investigate Zelzah. The property needs no boosting. It speaks for itself.

The land sells for $350.00 an acre and exceedingly liberal terms will be made to those who will agree to improve their property within a reasonable time.

For full information see owners.

VALLEY HOMES COMPANY,

802 Hollingsworth Building,

F3370.

Sixth and Hill. Los Angeles, Cal.

For Sale—10 acres best Sacramento Valley land, four miles main road from Corning in West Richfield Colony, quarter mile from new school house; R. F. D Bungalow with large porch, pump and sink on porch, good well for domestic use, 30-ton hay barn with stables, chicken house and corrals, hog corral, entire place fenced, 7½ acres alfalfa, good stand; splendid family orchard, including pear, peach, quince, fig in full bearing, and cherry, plum, prune and almond, newly planted. Two 330-foot rows Muscats and Thompson seedless grapes, one row each dewberries and loganberries; 1½ acres garden land. Abundant water from Colony ditch and by pumping from creek on back part of property. Big shade trees on creek bank furnish splendid setting. Prettiest place for natural beauty about Corning. Price, $3000.00 cash, or St. Paul or Minneapolis real estate might be considered as part payment. Address J. J. Tallmadge (owner), 375 Sibley street, St. Paul, Minn.

HIGHLY DEVELOPED INCOME OLIVE AND FRUIT RANCH

106 acres in the famous thermal belt of Placer County, 3½ miles from town of 2,500; 12 acres Mission olives, 25 years old; 12 acres Bartlett pears, full bearing; 10 acres peaches and plums; 6 acres diversified fruit; 20 acres timber; 36 acres hay and grain, etc., estimated value of crop for 1914, $11,000. Included in purchase price are $2,000 tractor, automobile, all necessary farming implements; price, $22,000.

We have a large list of improved and unimproved farms from 10 acres up.

D. W. HOBSON CO.,
Balboa Bldg., 593 Market St., S. F.,
or 819 J St., Sacramento, Cal.

For Sale—150-acre stock and alfalfa ranch situated 2 miles from city of San Bernardino, Cal., all in alfalfa but 15 acres; 10 acres in sugar beets, which will go 20 tons per acre; balance in fruit, walnuts and grapes. Land is sub-irrigated; 100 acres of ranch cuts 5 to 7 tons alfalfa per acre without irrigation, balance piped with 2500-foot, 10-inch, cement pipe; 3 artesian wells on place. Cut 850 tons hay last year, which sold for from $14 to $20 per ton on ranch. Two large hay barns and stables, tool house, out buildings, stone milk house, corrals, etc. House large two-story, with bath room and electric lights in house and barn Building in good repair. All fenced with smooth wire. School house at corner of ranch. A. H. Tilton, owner, R. D. No. 2, San Bernardino, Cal.

For Sale—10 acres of best Sacramento Valley land, four miles from Corning, in West Richfield Colony, R. F. D., quarter mile from new school house; land partly fenced; 200 orange trees, 15 olive trees, just coming into bearing, 2½ acres seeded to alfalfa, 2½ acres ready to be seeded; 3 acres can be leveled. Creek through back part of property furnishes water for stock; 9½ shares water stock in co-operative ditch; abundant water. Large willow trees on creek give shade and fuel. Price, $1250.00 cash, or St. Paul or Minneapolis, Minn., real estate might be considered as part payment. J. J. Tallmadge, owner, 375 Sibley street, St. Paul, Minn.

VICTORIA, AUSTRALIA, WANTS SETTLERS

Special inducements; government land, railways; free schools; cheap irrigation: 31 years to pay for farms adapted to alfalfa corn, grains, fruit, etc.; climate like California, ample markets; reduced passages, special excursion next November. Free particulars from F. T. A. FRICKE, Government Representative from Victoria, 687 Market St., San Francisco, Cal., Box X.

For Sale—Twenty acres adjoining prosperous town, one water stock in Mutual Water Co. with each acre. Conceded to be the best beet and alfalfa land in the state. About 600 feet from the station and beet dump. Five-year beet contract if desired. Price, $200. M. G. McNeely, Alpaugh, Tulare Co., Cal.

For Sale—Seven acres fine land, eight-room residence, barn, etc., right on banks of Chehalis river; steamers land at door; quarter mile from station, two transcontinental railroads,. Cost $3,000, sell for $2,500 cash. C. Daniel, Melbourne, Wash.

For Sale—40-acre alfalfa and fruit ranch, well improved, under irrigation, 2½ miles from Woodland, Yolo County. Easy terms. Call or write to Wm. Gould, Woodland, Cal.

Apple Orchards—Large and small, in the only apple producing section in California. The greatest section west of Missouri River. Write for booklet. Geo. W. Sill & Co., Watsonville, Cal.

Ranches, homes, acres, lots, exchange; send for free list. Wilson Bros., Santa Cruz.

SEEDS AND PLANTS

Luther Burbank Spineless Cactus (Only)—Live stock fed on this velvet cactus, grow fat; hens lay more eggs, cows give more and better milk, and horses grow sleek. Why not get a start in the best, costs no more to raise than that which they call just as good. Ten slabs for $5.00, with one fine fruiting sort free. Address or call at H. L. Bauers' Cactus Nursery, 4401 Hammell St., Los Angeles.

If you want choice varieties of Burbank's Spineless Cactus, address Mrs. Mary R. Miller, Lakeside, California.

$ $ $ $pinele$$ Cactu$. All varieties Burbank's fruiting and forage plants 10c up. Plant now. Black Bros.' Nursery, 455 Lucas, Los Angeles. $ $ $

Berry Plants and Rhubarb. My new Berry Book ready about October will be worth sending for. Louis F. Scribner, R. F. D., Pasadena, Cal.

Thornless Cactus Slabs for sale at 5 to 15 cents each. Chas. R. Hanna, R. D. No. 3, Riverside, Cal.

HORTICULTURAL PRINTING

Catalogues for the seed and nursery trade. The live stock and poultry industries are a specialty with us. Two thousand illustrations to select from. Write for prices and samples. The Kruckeberg Press, 237 Franklin St., Los Angeles.

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How to Make Money—Mrs. A. Basley's latest Poultry Book is without exception the best ever written. The secret of how to raise every turkey hatched and the "Basley Formulas," now published for the first time, are worth many times the price of the book. The "Western Poultry Book" is a practical book by a practical woman. Price $1. Order from Cultivator Publishing Co.

Dependable Winter Layers—Get our new catalog, get your Ancona and Red eggs from the flock that makes good, nothing better, our customers say, ours begin laying early and never stop. Our ten years' experience in California is bringing results to our customers. Goodacre Bros., Compton, Cal.

Poultry Wanted—We pay the highest market price for all the local poultry we can get, no matter how large the quantity, also fresh ranch eggs. We remit immediately. National Poultry Co., successors to Allaway & Layton Co., 607 E. Third St., Los Angeles, Cal.

Baby Chicks—Jumbo egg strain. White Leghorns, $9; best Anconas, $12; Brown Leghorns, $9; White Minorcas, $12 per 100. Sand Ridge Hatchery, Kerman, Cal.

Barred Rock and R. I. Red baby chicks. If you want to raise some broilers send me your order. Price $10.50 per 100 until September 15th. J. W. Lyon, Gardena, Cal.

White Minorcas—The most popular utility breed of today. Prolific layers of large white eggs. Baby chicks, $12 per 100; eggs. Order early. E. Cauble, Kerman, Cal.

Pacific Poultry and Pet Stock Exchange: Poultry, Pigeons, Birds, Rabbits and Pet Stock of all kinds. Write for catalogue. 3737 Adair St., Los Angeles, Cal.

Barred Plymouth Rocks — "None better." Special prices for May and June. Write for 'em. C. H. Vodden, Los Gatos, Cal.

For Sale—Chinese Ringneck Pheasants, $5.00 a pair. Eggs for hatching, $2.00 for 15. S. A. Miller, 502 Stella Ave., Watts, Cal.

Trap-Nested White Leghorns—Bargains in Cockerels from heavy layers. Only $1. A. R. Schroeder, Box C, San Gregorio, Cal.

MACHINERY

FOR SALE—2ND-HAND WIND MILLS, TANKS,
PUMPS, ENGINES
RANCH MACHINERY
POTATO MACHINERY
We Manufacture New Galvanized Tanks,
Guaranteed Special Price

1000 gallons, $19.50, 2000 for $29.50. Header, fine shape, $125; Champion Binder, $75. Whittman Power Baler, Mowers, Cultivators, Harrows, Plows, Sundries.

ENGINES

To 40 H. P., not the 10 per H. P. kind, but engines that will do the work. Pumps and Pump Fittings

HOW'S THIS?

Biggest little Pumping Outfit ever sold at the price, 2½ H. P. Horizontal engine, upright jack and belt, new, $98. Capacity, 1200 gallons 100 feet. Demmitt Co., upstairs, 120 N. Main, Los Angeles.

We have pumps, motors and engines of all sizes and for all conditions, which we will sell or rent. If you want a complete plant or any part, write us your needs and get our prices. Can give you special low price on engine and automobile oil, also belting Machinery & Motor Exchange, 756-768 S. Alameda St., Los Angeles, Cal. Main 6382.

For Sale—Used and new gas engines, 2 H.p. up, rebuilt and fitted with modern equipment. 22 years' experience enables us to repair and rebuild gas engines correctly. Get our prices. Lloyd, 806 N. Main, Los Angeles.

For Sale Cheap—Pumping outfit; 2 twin, 10-inch American pumps; 70 horse-power engine, oil burner boiler, oil pumps, etc. Apply to Mrs. A. A. Porter, Soledad.

Electric Motors—We buy, sell, repair and exchange new and second-hand motors, also installing. THE MOTOR SHOP, 553 Maple ave., Los Angeles. A 4516.

LIVE STOCK

Ohio Improved Chester White (O. I. C.)—A few male pigs of March and April farrow. Everything else sold. Have a limited number of sows bred for October farrow. Am booking orders now for these. All stock cholera immune. Crated and registered free. C. B. Cunningham, Mills, Sacramento County, Cal.

Grape Wild Farm Thoroughbreds—Guernsey Bulls of A. R. Breeding. BERKSHIRE HOGS. Finest herd in the state. All ages for sale. A. B. Humphrey, proprietor, Mayhews, Sacramento Co., California.

A Splendid Toggenberg Buck—Hornless, nearly pure bred. Three months old. Write for particulars and pedigree; or will trade for a good grade doe. Mrs. T. Spencer Watts, Sonoma, Cal.

Thoroughbred Berkshire Boars of all ages from developed and large-boned hogs. Riccomi Bros., Mountain View, Cal.

Glenview Poland China—Stock for sale. Chas. R. Hanna, R. F. D. No. 3, Riverside, Cal.

N. H. Locke Co., Lockeford, Cal.—Choice young Jersey bulls for sale.

Poland China Stock for sale, boars and gilts, D. M. Clark, Arlington, Cal.

MISCELLANEOUS.

Free for Six Months—My special offer to introduce my magazine "INVESTING FOR PROFIT." It is worth $10 a copy to anyone who has been getting poorer while the rich, richer. It demonstrates the REAL earning power of money, and shows how anyone, no matter how poor, CAN acquire riches. INVESTING FOR PROFIT is the only progressive financial journal published. It shows how $100 grows to $2200. Write NOW and I'll send it six months free. H. L. Barber, 430, 28 W. Jackson Blvd., Chicago.

FOR SALE
Perfectly equipped
propagating plant,
fine opening for an
all round man. Plenty
of deciduous and olive
budding.
Box 63, Rialto, Cal.

WANTED.

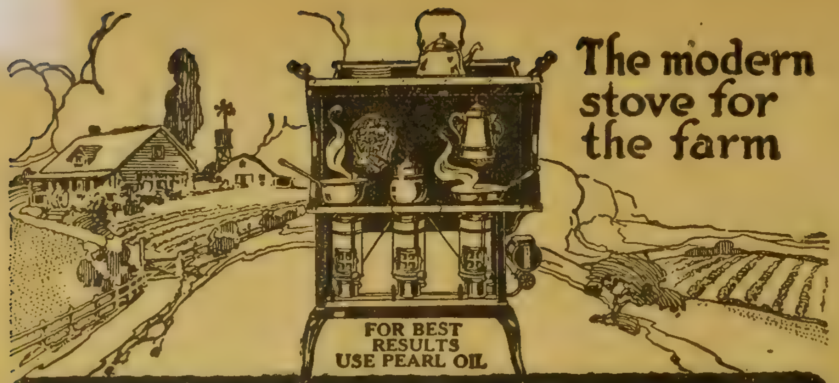
Wanted—Capable working foreman, between the ages of 30 and 45 years. Must know the apple business from A to Z. Only those seeking a permanent position need apply and in person. A. W. McCready, Jr., Yucaipa, Cal., Suburban (Redlands Exchange), 9100

Rural Boys and Agents—With good references, to sell "GOPHERINE;" it gets the gophers' goats. No money required; a fast selling, guaranteed article. One agent made $12.00 in ten hours. For particulars write Edward G. Johnson, Scientific Horticulturist, 56 Pryce street, Santa Cruz., Cal.

Salesmen wanted—Steady pay, good treatment, big money made selling our permanent, hardy, foothill grown nursery stock. Write for terms. Since 1879. SILVA-BERGTHOLDT COMPANY, Box 750, Newcastle, California.

RABBITS

New Zealand Reds, prize stock, young for sale; buy now and raise for the winter shows. Mrs. C. A. Richey, R. F. D. 8, Box 557, Los Angeles.


The modern stove for the farm
FOR BEST RESULTS USE PEARL OIL

A good oil stove cooks just as well as a wood or coal range—and does it quicker and cheaper. It saves your time and strength—for there's no wood, coal or ashes to lug. The

New Perfection OIL COOK STOVE

burns kerosene—the clean, cheap, easily-handled fuel. Its blue flame gives an intense heat and you can regulate it to any degree you want—just like a gas range. It doesn't smoke—nor taint the food. An ideal summer stove because it doesn't over-heat the kitchen. Many use it the year 'round. Dealers everywhere.

Standard Oil Company
(California)

THIS Bank Your Bank

You can be a customer of the oldest and largest savings bank in the Southwest, no matter where you live.

Banking by Mail is the favored method of thousands of the SECURITY'S depositors.

Deposits can be mailed in the form of checks, drafts, or currency in registered envelope, with every assurance of safety. Withdrawals can be made just as easily.

Write for full information regarding banking by mail. 4% on Term Savings Accounts.

SECURITY TRUST & SAVINGS BANK

Resources over $46,000,000.00

SECURITY BUILDING
Fifth and Spring
LOS ANGELES
EQUITABLE BRANCH
First and Spring

The Leading School in Central California

ADOLPH JOHNSON, Pres.

COMPLETE COURSES

Bookkeeping Shorthand and Normal Training

A term in this school will insure you a good position with opportunity for advancement. We pay your railroad fare, we rent you books and board you at reasonable rates. Write for catalog.

STOCKTON COM'L COLLEGE
Record Bldg. Stockton, Cal.

This coupon is worth $10.00 on a 6 months' or year's tuition to non-resident students.

Only one coupon from each student.

SEMPERVIRENS CACTUS FARM
JOHN ZUUR, Proprietor
Ask for 1914 Catalogue *SANTA ROSA, CAL.*

Household Department

RUN UP OLD GLORY

By W. D. Nesbit.

Run up Old Glory!
Let it blaze
In red and white against the sky
And tell the story of the days
When hearts were stout and hopes were high.
Forget the daily fights of greed;
Forget the struggles, the dismay
Of facing cruelty and need—
Run up Old Glory for the day!

Run up Old Glory!
Think of all
The old flag means to you and me,
Of how the blast of freedom's call
Shook out its fold from sea to sea;
Red with the blood that it has cost,
White with the souls of them that died—
Today by laughing breezes tossed
It whispers of a nation's pride.

Run up Old Glory!
Fling it forth
And feel anew the country call
That thrills east, west and south and north
And has its word for one and all.
Run up Old Glory—fling it far
Across the blue of heaven's dome
And feel that every stripe and star
Is warder of your hearth and home.

CAN A WOMAN SUCCEED IN HORTICULTURE?

(Concluded from last week.)

When the rainy season fairly set in we were comfortably settled in our cozy home. We had our furniture, books, pictures and piano sent on from the East, and had bought our stoves and the few extra things we needed, which made us spend $150 more.

We decided to hire our ground plowed and not keep a man. We also decided to learn to milk and care for the animals. Day after day we poured over farm bulletins on animal industry, on soils and fertilization, on almonds, on olives, figs and other fruits, on milk and alfalfa.

While we were doing all this and caring for our good Pet, and Daisy, and Peggy (for thus we had named our animals, Helen was forgetting to cough and I to jump at every noise.

Spring came, and with it our real work. The plowing had been done at a cost of $42. We decided to border our place with olives and walnuts. For the latter we planted nuts, intending to graft them later, as Anna said that this made a healthier tree.

We planned eight acres for alfalfa, as we thought that every fruit farm should also have provision made for some animals. Five acres were planted to Sultana grapes. This was because Anna insisted that we should have some. Five acres were planted to almonds, four to prunes, and the remaining three around the house were used for the buildings, a home orchard and vineyard, some small fruits and the yard for chickens.

How proud we were when the last work was done, our alfalfa field fine as a garden, our trees and vines carefully planted and cut back, but, alas! how empty our pocketbook felt.

Our fruit and alfalfa, with the probable outgo for the first year's cultivation we estimated at an average of $20 per acre, or $500. Our total expense at the close of the first year was close to $9800, which included interest on the mortgage.

We had the happiness, however, of taking in some money. We tried to take care of the animals in a scientific way and their response was a generous one.

Peggy presented us during the year with 13 cunning, snub-nosed pigs. It nearly broke our hearts to sell six of them, but we did, and they sold for $54. Gentle Daisy made during the year 540 pounds of butter that brought an average of 30 cents per pound, or $162; this beside the milk, butter and cream we used. Our hens did well also, and we sold $60 worth of eggs. We had a well-marked Holstein calf, which we kept, and 100 lively chickens. A neighbor had put out corn among the trees and vines and had paid us $100 for the use of the land.

The close of the year found our trees thriving and our alfalfa also. We put five tons of hay in the barn that we had cut from our eight acres. We paid our household bills from the money we had taken in. Our hands were not as white as they were, but we didn't care. We had been having a year of happiness, for our out-of-door work, our quiet living and regular hours had worked a miracle in health. We had done some kinds of work that we had never dreamed we could or would do, but it had been far less distasteful than we had feared.

The second year was very much like the first, except that our alfalfa brought us 40 tons of hay, which we sold on the ground for $5 a ton; we had also put ten tons in the barn.

The third year gave us a small return from our fruit. The trays and boxes for the raisins cost $175, and we had two tons from our five acres. We sold these in the sweat box for $160.

The fourth year we had more generous returns, and when our vines were in full bearing we harvested one year six tons of raisins which sold for $480, two and a half tons of almonds at 11 cents gave us $550, six tons of prunes averaged four cents, or $480. We kept three cows now; had a few hives of bees, and a fine garden of flowers and vegetables, which gave us all we used and some to sell. We kept one man all the time, who milked, kept the place free from weeds and cared for the animals and garden.

We had paid our mortgage and had a small amount of money in the bank, not a princely sum, for expenses had been heavy, and the crops had some drawbacks, but our place had doubled in value; we had health and happiness. We were friends with our neighbors, the humble ones, as well as those more fortunate in education and money; so under our own vine and fig tree, without books and work, with the busy days of sunshine and rain, and the wonderful starlit nights, with the flowers and bees and birds, with mother earth good to us, with the few outside interests we had undertaken, we learned to realize that—"God is not far from any of us!

He speaks to us in every glad surprise,
His glory floods us from the noon-tide skies;
The stars declare His love when daylight dies:
And we can hear his voice."

GOOD THINGS FOR THE FRUIT CUPBOARD

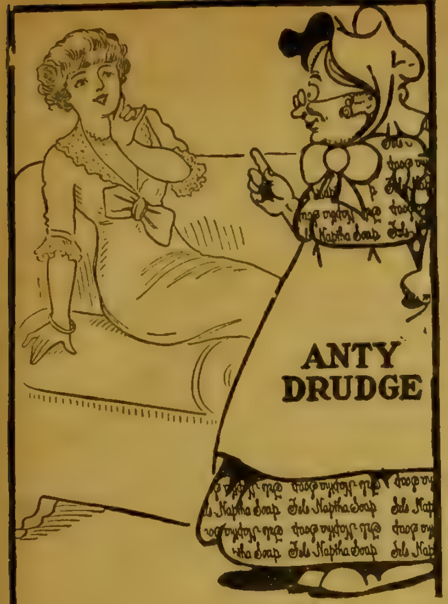
Sing a song of canning-time,
Sweetness everywhere;
Sugar, spice and all things nice
Scenting all the air.
Pickles, butters, jelly, jam,
Load the cellar shelves;
Aren't we proud to know that we
Made 'em all ourselves?
—Selected.

Pear Pickles.

Select small pears (the Seckel is a good one), pare but leave whole. They should be ripe, but not soft. Make a syrup of one pound of sugar, two pints good vinegar, one-half pint hot water and a goodly supply of mixed spices; when boiling drop in pears and cook 10 minutes, then take off the fire. Next morning drain off liquor, boil and pour over the pears. Do this for seven mornings, adding more vinegar to the liquid if it seems to need it. Put in a stone jar and weight down with a plate, cover, and keep in a cool place.

Pickled Apples.

Eight pounds of apples, pared and quartered, four pounds of sugar, one quart of vinegar, one ounce of stick cinnamon, one-half ounce of cloves. Boil vinegar, sugar and spices together, put in the apples and let them remain in about twenty minutes.



Mrs. Gay—"Anty Drudge, I'm just delighted with Fels-Naptha Soap. My washing is all done without a bit of steam or smell, and it's such a comfort to know I've gotten rid of the sickening odor of boiling clothes. I use it for John's flannels, too. It leaves them so soft and white."

Anty Drudge—"My dear, you are the third who has said that to me this morning. I'm certainly glad I told you about Fels-Naptha Soap."

You *used* to have to boil your clothes to get them clean, but nowadays progressive women all over the country use Fels-Naptha Soap. Their clothes are clean and their Fels-Naptha works best in cool lukewarm water, without hard rubbing or boiling. It is especially good for woolens because hard rubbing ruins them, and Fels-Naptha does away with all hard rubbing.

Buy it by carton or box and follow directions on the Red and Green Wrapper.

Fels & Co., Philadelphia.

FELS-NAPTHA

Put the apples in a jar, boil the syrup until thick and pour over them.

Pickled Peaches.

Sprinkle one-half gallon of sugar over one gallon and one-half of peeled peaches with a clove in each peach. Let this stand over night. Drain the juice into a preserving kettle and boil hard 15 to 20 minutes. Add two pints of strong vinegar to the boiling juice. Put the peaches in and boil all together until peaches are tender. Put the fruit in cans, pour syrup over and seal while hot.

Fig Pickles

Soak figs over night, or a few hours, in one gallon of water and a handful of salt. Remove figs from the water and boil until tender in one gallon of water and one cup of vinegar. Drain and let simmer a short time in a syrup made of one quart of vinegar, three pounds of sugar, one tablespoon each of cinnamon, cloves, allspice. Figs for pickles must not be too ripe.

Cherry Sweet Pickle.

If you have never made sweet pickles of cherries I hope you will try making some this year, they are especially fine. Pick cherries with the stems on, wash and pack in jars; boil one quart vinegar, one and one-half cups of sugar and a few cloves or allspice together, pour over cherries and seal.

> **"Where Faintheart can't, there Strongheart will;
> The blunt tool proves the workman's skill."**

Spiced Currants.

Six pounds of currants, four pounds sugar, one pint vinegar, two tablespoons cinnamon, one tablespoon cloves, one tablespoon black pepper. Put the spices in a bag. Mash the currants and put them on to boil. After cooking a few minutes strain out the currants through a colander. Add the juice to the vinegar, sugar and spices let them boil 15 to 20 minutes and pour over the currants.

Apple Catsup.

Peel and quarter a dozen apples. Stew in a very little water until soft, then rub through sieve. To a quart of the sifted apples add one teacup sugar, one teaspoon pepper, one teaspoon cloves, one teaspoon mustard, two teaspoons cinnamon and two medium-sized onions, chopped fine. Stir all together, add one tablespoon salt and half a pint of vinegar. Boil one hour and bottle while hot.

Fig Preserves.

Weigh figs and allow an equal weight of sugar. Wash them, cover with cold water and let stand for 24 hours, drain and drop them into boiling water and simmer until tender. Return to the cold water for two days, changing the water once; then make a syrup with the sugar with one-quarter of its bulk of water, add for every five pounds the thinly pared rind of a lemon and one-quarter of an ounce of green ginger; add the drained figs and simmer for half an hour, then bottle and seal.

Quince Jelly

Peel, cut and core some fine ripe quinces; put in sufficient cold water to cover and stew gently till soft, but not red. Strain juice without pressure, weigh and to every pound of juice allow one pound of crushed sugar. Boil the juice (uncovered) 20 minutes, add the sugar and boil again until it jellies—about a quarter of an hour. Stir and skim well all the time. Strain through thin cloth into jelly glasses and cover when cold. The remainder of the fruit can be made into marmalade, with three-fourths of a pound of sugar and one-fourth pound of juicy apples to every pound of quinces, or it can be made into compotes or tarts.

Green Grape Jelly

One gallon of grapes, three pounds of sugar, one pint of vinegar, two tablespoons of stick cinnamon, two tablespoons of whole cloves.

Remove the stems from the grapes, wash and drain, then put grapes, vinegar and spices in a preserving kettle and cook until the grapes are tender; turn into a jelly bag and strain. Put the juice in a kettle and cook for 20 minutes, add the sugar (heated in pan in slow oven), and cook until it will jelly; about five minutes will be needed. Seal at once.

Pickled Walnuts.

Take 100 soft nuts and prick with a darning needle to make sure they are not woody. Put them in a brine of four pounds salt to one gallon of water and allow to remain exactly nine days, changing the water every third day. Then drain and put on a dish and place in the sun until they become perfectly black, which will be in two or three days. Place in jars, which should not be filled quite full. Boil for 10 minutes sufficient vinegar to cover, allowing for each quart of vinegar two ounces whole black pepper, one ounce allspice, one ounce bruised ginger. Pour hot over the nuts, which should be entirely covered. Cover and keep in a dry place and they will be ready for use in one month. They need not be sealed.

USING THE HOME CANNERS

In canning it is absolutely essential that a definite program be followed. This gives precision to the work and eliminates many mistakes that would otherwise occur. The program given here has been found by experience to be very satisfactory. Study this program carefully before proceeding, and be sure to have all the articles listed arranged conveniently at hand ready for use.

Program for Canning Tomatoes at Home.

Prepare the canning outfit, tables, fruit, water, fuel, salt, sugar, utensils, etc., ready for use.

Scald the tin containers and fruit jars and start the work of heating and tinning the capping steels.

Scald the tomatoes in boiling water and remove skins and cores. Remove the skins at once. The scalding process is important and should be rapid, thorough and complete. Chill in cold water.

Fill the cans or jars to within one-fourth inch of the top; add tomato juice (not water), and salt and then solder the caps on the cans. Invert the cans in trays and allow them to drain through the ventholes. Weigh them as required by the pure food and drugs act as applied to the size of can and kind of fruit used.

Exhaust the cans in boiling water five to eight minutes, according to the condition of the fruit.

Remove the cans and finish the capping by closing the venthole in the tin cap.

Return the cans to the boiler and sterilize or process for 15 to 30 minutes, according to the condition of the fruit and the kind of canner used.

Remove the cans. Inspect them carefully to see whether all are air-tight. Let cool before you label.

Label, grade, number and tier or pack for shipment. Enter number, cost, etc., in your book account.

DRINK "QUALITY" TEA and COFFEE
From IMPORTER to CONSUMER direct by PARCEL POST
"CHA-MA" - - - - 60 CENTS A LB.
A FAMOUS GREEN UNCOLORED JAPAN TEA
"NIN-GAR BLEND" - - 50 CENTS A LB.
A DELICIOUS BLACK ENGLISH BREAKFAST TEA
"SEE LOE BLEND" - - 75 CENTS A LB.
OF THE CHOICEST BLACK TEAS IN THE WORLD
PACKED ONLY IN 1-LB., ABSOLUTELY AIR-TIGHT TINS
"E-CIL-A BLEND" - 1 LB. 40C; 3 LB. $1.00
A CHOICE BLEND OF PURE COFFEE
Packed in Air-Tight Packages
ALL POSTAGE PAID BY US. MAIL ORDERS TO
THE WM. J. SCHROTH CO.
112-A MARKET STREET, SAN FRANCISCO, CAL.

Dividend Notice
THE GERMAN SAVINGS AND LOAN SOCIETY
526 California St., San Francisco

For the half year ending June 30, 1914, a dividend has been declared at the rate of four (4) per cent per annum on all deposits, payable on and after Wednesday, July 1, 1914. Dividends not called for are added to the deposit account and earn dividends from July 1, 1914. Adv.

GEORGE TOURNY, Manager.

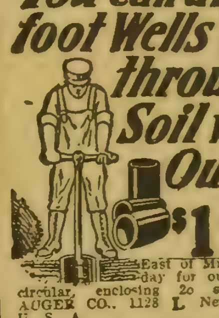
Kellogg's Ant Paste Makes Ants Disappear

"Kellogg's Ant Paste Co.:

"I never saw anything so effective as KELLOGG'S ANT PASTE. There was not an ant left in the house to tell the tale. I am very thankful and have told all my neighbors."

Thousands of similar testimonials have been received.

Demand Kellogg's, "The Jar With the Rattle Cap." For sale at all Grocers and Druggists.



You can dig 40 foot Wells quickly through any Soil with our Outfit at $12 Delivered East of Mississippi. Write today for our Large Descriptive circular, enclosing 2c stamp. STANDARD AUGER CO., 1128 L Newport ave., Chicago. U. S. A.

Be Free To Try An Arnott Cultivator

You have heard about the ARNOTT Cultivator, but possibly you never saw one work. Why don't you try it in your own orchard? Free trial costs you nothing. More ARNOTTS sold than any three other styles combined. Made with fore truck as shown or with pole. Curved rear standards allow good trash clearance. Made in Los Angeles as result of eleven years experience with California orchards. Cultivates deeper. Pulls lighter. High-grade steel construction. Write today for free trial offer. Cultivators shipped everywhere. None returned.

ARNOTT & CO. EST. 1892 112-118 S. Los Angeles St. LOS ANGELES, CAL.

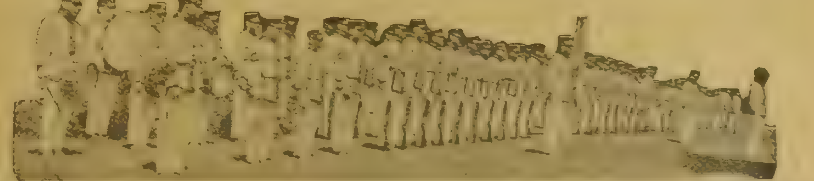
DAISY FLY KILLER placed anywhere, attracts and kills all flies. Neat, clean, ornamental, convenient, cheap. Lasts all season. Made of metal, can't spill or tip over; will not soil or injure anything. Guaranteed effective. Sold by dealers, or 6 sent by express prepaid for $1.

HAROLD SOMERS, 150 DeKalb Ave., Brooklyn, N. Y.

MOUNT TAMALPAIS MILITARY ACADEMY

A school for boys in which a military system of government, and military methods of physical training and moral discipline are used for building up the character. For twenty-four years these methods have been remarkably effective in awakening and calling into exercise the moral powers of the boy and of great value in preparing him for the sterner duties of life when he leaves school. A thorough high school course. Commercial branches. Separate Junior School for younger boys. Open-air gymnasium and swimming pool. Fully accredited to the universities. U. S. Army Officer. Infantry, Cavalry, Mounted Artillery. For catalog address Twenty-fifth year begins August 18, 1914.

ARTHUR CROSBY, A. M., D. D. Headmaster, San Rafael, California



San Francisco--Los Angeles Produce Markets

Los Angeles Market

LOS ANGELES, July 1, 1914.

BUTTER

Butter remains stationary as to quotations, but decided weakness prevails. Arrivals, nearly 100,000 pounds daily.

Prices to trade 4 cents above following quotations:

Creamery Extras	.25
Firsts	.22@23
Country	.20
Ladle	.19

CHEESE

Prices to trade 1 and 2 cents higher:

Eastern Daisy	.18½@19
California Fresh	.14½
Domestic Swiss	.21@22
Longhorn	.18½@19
Imported Swiss	.24@26
Oregon	.16½@17½
Cheddars	.19

EGGS AND POULTRY

Eggs in light receipt and a slightly lower quotation is reported on lower grades.

Prices to trade 3 cents higher than following quotations:

Fresh Ranch, Case Counts	.26
Candled	.28@29
Northern Case Count	.24
Petaluma-Santa Rosa	.25

Price to producer:

Hens, lb.	.13@16
Roosters	.7@8
Broilers	.17
Fryers	.22
Roasters	.19@20
Turkeys	.22@26
Ducks	.14@15
Geese	.16
Squabs, doz.	2.50

LIVE STOCK

The following quotations are f. o. b. Los Angeles on all stock:

Hogs, 175 to 200 lbs., per cwt.	9.00
Prime Steers	.7½
Heifers	.6¼
Calves, lb	.8½
Sheep—	
Ewes, head	4.00
Wethers	4.25@5.00
Lambs, head	4.00

POTATOES

Wholesale selling price:

Old	1.40@1.50
Sweets, lug	.75@85
News, cwt.	1.25@1.35
Northern Burbanks, cwt.	1.45@1.55

ONIONS

Wholesale selling price:

Bermudas, crates	2.25@2.35
Stockton Red, cwt.	2.40@2.50
Red, cwt.	2.75
Silver Skins, lug	.65@75
Yellow Danvers, cwt.	2.50@2.65
Garlic	.12@15

VEGETABLES

Wholesale selling price:

Asparagus, lb.	.7@8
Artichokes, Northern, doz.	.75@90
Beets, dozen	.20@25
Beans, String	.4@6
Cabbage	.75@90
Carrots, doz.	.20@25
Cauliflower, doz.	1.00@1.15
Celery, doz.	1.15@1.30
Corn, Green lug	.40@50
Cucumbers, lug	.40@65
Chives, doz.	.40@50
Egg Plant	.7@9
Escarole, doz.	.40
Horseradish, doz.	.10@12
Leeks, doz.	.35@40
Lettuce, crate	.65@80
Mint, doz.	.25@40
Okra, lb.	.7@9
Onions, Green, doz. bunches	.15@20
Oyster Plant	.25@30
Parsnips	.25@30
Peas, lb.	.5@6
Oyster Plant	.25@30
Peppers	.8@9
Chili, lb.	.9@11
Radish	.15@20
Rhubarb—	
Crimson Winter	.75@80
Spinach, doz.	.20@25
Squash—	
Cream	.40
Summer, crate	.35@50
Crookneck	.50@60
Turnips	.25@30
Tomatoes, crate	.75@1.00

FRESH FRUIT

Wholesale selling price:

Apples, new, lug	1.00@1.15
Apricots, lug	.35@60
Berries—	
Strawberries, basket	.3@4
Raspberries	.4@5
Blackberries	.3@5
Loganberries	.5@6
Gooseberries, lb.	.9@11
Bananas	.3½@4
Cherries—	
Red, lb.	.9@10
White, lb.	.8@10
Cantaloupes, crate—	
Ponies	1.00@1.15
Standard	1.35@1.50
Currants, crate	1.45@1.60
Figs, 1-layer box	.50@60
Loquats	.4@6
Pineapples, lb.	.6@7
Peaches, lug	.75@1.25
Plums, lug	.75@1.25
Watermelons, lb.	¾@1¼

CITRUS FRUIT

Wholesale selling price:

Lemons	2.00@5.50
Grapefruit, Seedless	2.50@2.75
Valencias	1.75@2.50
Limes, crate	1.25

DRIED FRUITS

Wholesale prices to retailers are:

Evaporated Apples, Fcy., lb. bxs	.10@12
Apricots	.15@18½
Peaches	.6½@7½
Pears	.8@12
Nectarines	.12½
Prunes	.6@16½
Plums	.10

NUTS

Prices named by California Walnut Growers' Association are:

No. 1	.17½
Budded Walnuts	.21
No. 1 Soft Shell Walnuts	.16
No. 1 Hard Shell Walnuts	.15½
No. Twos	.11½

Wholesale price:

Almonds—	
I X L	.22@23
N P U	.20@21
Drakes, Thin Shells	.18@19
Pecans	.18
Peanuts—	
California, Raw	.5½@6
Japan	.6@6½
Eastern	.7
Pine Nuts	.15@16
Rice Corn	5.00@5.25

HONEY

Wholesale selling price:

Comb, Fancy, Water White	.16@17
White	.14@15
Light Amber	.11@13
Extr. Water White	.10½
White	.10
Light Amber	.9
Beeswax	.35

BEANS

Wholesale selling price:

Producer's price not far from one dollar under these quotations:

Limas	7.35@7.50
Lady Washington	4.60@4.75
Black Eyes	7.50
Pinks	4.65@4.85
Lentils	6.00@6.25
Small White	5.00@6.00
Garbanzos	8.00@8.50

RICE

California	3.50@4.75
Broken	3.00@3.75

HAY

Buying prices f. o. b. cars Los Angeles:

Barley	10.00@11.00
Wheat Hay	10.00@11.00
Tame Oat	11.00@13.00
Alfalfa	9.00@11.00

GRAIN

Wholesale selling prices f. o. b. Los Angeles:

Wheat	1.85
Corn	2.15
Oats, Red	2.35
Oats, White	1.60
Kaffir Corn	1.90
Millet	3.75
Popcorn	4.75@5.00
Egyptian Corn	2.20
Barley Seed	1.45
Milo Maize	2.00
Cal. Seed Oats	2.25
Sunflower Seed	5.25@5.35

FEED STUFF

Wholesale selling prices f. o. b. Los Angeles:

Bran, Heavy	1.70
Alfalfa Meal	1.05
Alfalfa Syrup, per cwt.	1.05
Beef Scraps	3.00@3.10
Beet Pulp	1.25
Cracked Corn	2.20
Feed Meal, cwt.	2.25
Cotton Seed Meal	1.85
Blood Meal	3.60@3.70
Bone Meal	2.00@2.10
Charcoal	1.90@2.00
Bone Green	1.95@2.05
Cracked Wheat	2.00
Oil Cake Meal	2.05
Fish Meal	3.15@3.25
Rolled Oats	1.65
Rolled Barley	1.20
Middlings	1.95

One of the drawbacks of success is that it often has a string tied to it.

WEATHER CONDITIONS

For Week Ending June 27, 1914.

Report from the various stations of the U. S. Weather Bureau, by Geo. H. Wilson, director, San Francisco.

	Rainfall Data.			Temperature Data.	
	Past Week.	Seasonal to Date.	Normal to Date.	Maximum.	Minimum.
Eureka	.78	37.21	46.02	62	46
Red Bluff	1.10	34.43	25.02	94	56
Sacramento	.32	20.42	20.09	92	52
San Francisco	.12	29.60	22.27	84	50
San Jose	.08	19.38	16.79	90	46
Fresno	.00	11.07	9.68	100	54
Independence	.00	12.01	9.53	86	46
San Luis Obispo	.00	31.20	20.51	96	44
Los Angeles	T	23.65	15.64	86	54
San Diego	.00	9.82	10.01	78	54

T means trace.

San Francisco Market

SAN FRANCISCO, June 30, 1914.

BUTTER

Butter quotations refuse to change. Market steady.

Extras	.24
Prime Firsts	.23
Firsts	.23

CHEESE

California Y. American	.14@14½
California Flats	.11@12½
Oregon Twins	.15½
Oregon Y. America	.16
Cheddar	.20

EGGS AND POULTRY

Slightly lower quotations in eggs were made on last Friday, which is the only feature of interest in the egg market.

Extras	.24
Firsts	.22½
Select Pullets	.21
Hens	.15@17
Fryers	.25@30
Roosters, old	.12@13
Roosters, young	.24@26
Broilers	.18@22
Ducks, doz.	6.00
Squabs	1.50@2.00
Belgian Hares, lb.	.13@14

LIVE STOCK

San Francisco prices, gross weight:

Steers	.4@7¼
Cows and Heifers	.3@6¼
Calves, lb., live weight	.7@9
Hogs	.7¾@8¾
Wethers	.5½@5¾
Ewes	.4¼@5
Milk Lambs	.6½@7½

POTATOES

Delta Burbanks	1.00@1.50
Oregon Burbanks	.75@1.25
Washington	.60@70
New Potatoes, lb.	1¼@1¾
Garnets	.1½@2
Sweets, cwt.	2.50@2.75

ONIONS

Bermudas, crate	2.00@2.25
New Reds, cwt.	2.00@2.25
Garlic, New	.5@8

VEGETABLES

Wholesale selling price:

Asparagus, box	.75@1.25
Beans—	
Limas, lb.	.5@6
Wax, lb.	.2@3
Strings	.2@3
Cabbage, cwt.	1.00@1.25
Carrots, sack	.35@50
Cauliflower, doz.	.40@70
Corn Green, sack	.75@1.25
Alameda	.75@1.25
Cucumbers—	
Local, box 2½ doz.	.40@75
Deltas, lugs	1.00@1.25
Egg plant, lb.	.6@7
Peas, lb.	.2@3
Peppers—	
Bell, Southern, lb.	.5@8
Bell, Mexican, lb.	.15@17
Chili	.3@6
Rhubarb, box	.60@1.00
Tomatoes—	
Imperial, crate	.60@75
Southern, crate	.25@40

FRESH FRUIT

Apples—	
Red Astrachan, box	.75@1.15
White Astrachan	.50@75
Gravensteins	.50@1.50
Apricots, crate	.50@75
Small, lugs	.75@1.25
Canners, ton	$22.00@30.00
Blackberries, chest	3.00@4.50
Bananas, Hawaiian, bunch	1.00@1.50
Cantaloupes, crate	1.25@1.50
Ponies	1.00@1.25
Orange Pack	1.00@1.25
Cherries—	
Royal Ann, lb	.5@9
Black, lb.	.8@12
Black, box	.75@1.00
Royal Ann, box	.75@1.00
White, lb.	.4@6
Currants, chest	6.00@7.50
Figs—	
Black, box, single layer	.25@35
White, box, single layer	.40@65
Grapes, lug	2.00
Red	3.50@4.50
Black	1.50@3.00
Gooseberries, lb.	.4@5
English	.8@10
Loganberries—	
Red	3.00@4.50
Black	2.00@2.50
Loquats, crate	.75@1.25
Peaches, crate	.40@50
Basket	.40@75
Lugs	.85@1.25
Plums, crate	.85@1.25
Pears, box	.50@1.00
Prunes, crate	.40@65
Pineapples, Hawaiian, doz.	.40@65
Strawberries	2.00@3.50
Raspberries	4.00@6.00
Watermelons	.1½@2¼

CITRUS FRUIT

Grapefruit, Seedless	1.50@2.50
Lemons	2.75@5.50
Lemonettes	2.50@3.00
Limes, cs.	9.00@10.00
Navels	1.25@2.50
Tangerines	.75@1.25
Valencias	1.75@2.50

DRIED FRUITS

Wholesale prices are:

Prunes—1913 crop, bulk basis: 30s-40s, 7½c, 40-50s, 7½c; 50-60s, 7 1-2c; 60-70s, 7½c; 70-80s, 7c; 80-90s, 5¾c; 90-100s, 5½c. The above are for both Santa Clara and outside; 1912 crop worth practically as much as the new crop; 20-30s, 15c in 25-lb. boxes.

Other Fruits. 50-lb. Boxes—	Standard	Ch.	Extra Ch.	Fcy.
Evap. Apples	....	10	10½c	11½c
Peaches	4¾c	5 c	5⅝c	5¾c
Pears	8½c	9 c	10 c	.....

RAISINS

The following prices are f. o. b. Fresno, as given out by the Associated Raisin Company, and are effective on all sales until August 1, 1914. 1912 crop practically the same figures as the new crop. 1913 crop, per lb., effective at once: Loose Muscatels (50s), 1-crown, 4¾c; 2-crown, 5½c; 3-crown, 6c; 4-crown, 6c; Seeded, fancy, 16-oz. pkgs., 7½c; do, 12-oz., 6c; do, bulk, 6¾c; do, choice, 16-oz., 7c, do, 12-oz., 5¾c; do, bulk, 6½c; Sultanas, no stock; Thompson Seedless, unbleached, 50s, 6c; 16-oz., 7⅛c; 12-oz., 5&c; recleaned, ¼c advance; do, floated, ½c advance; London Layers, no stock. Local representatives of the Association are asking ¼c higher, while several of the large packers are quoting ⅛c under the Association's figures.

The California Associated Raisin company has issued a price list dated May 28th, on the 1914 crop.

3 Crown London Layers, 20 lb. box, $1.15. 4 Crown Cluster, $1.40. 5 Crown Dehesa Clusters, $2.00. 6 Crown Imperial Clusters, $2.50. 5-lb. boxes, 50c extra; 10-lb. boxes, 25c additional Fancy Clusters, 1-lb. cartons, 20 to the box, $1.65. Fancy Clusters, 2-lb. cartons, 12 to the box, $2. Fancy Clusters, 5-lb. cardboard cartons, 4 to the box, $2.25. Bulk Layers in 50-lb. cases, $2.50. All prices guaranteed against decline to January 1, 1915, and subject to advance without notice."

NUTS

Peanuts—	
Unpolished	.5½@6
Polished	.6@6½
Japanese, Shelled	.6¼@6¾
Italian Chestnuts	.6½@7

BEANS

Wholesale selling price:

Limas	6.80@6.90
Pink	4.10@4.20
Black Eyes	7.00@7.25
Cranberry	5.75@6.00
Small White	4.75@5.80
Garbanzos	6.50@7.50
Large White	4.10@4.25
Bayou	6.50@7.00
Manchurian Cranberries	3.75@3.90
Manchurian Butters	4.60@4.80
Manchurian Speckled Bayous	3.75@4.00
Red Mexican	6.00@6.50
Horse Beans	2.00@2.25
Red Kidney	6.00@6.25

HONEY

1913

Comb, Water White	.14@15
Amber	.12@15
Dark	.3½@4
Extracted White	.7½@8
Light Amber	.6½
Dark	.3¼@4
Beeswax	.27@32½

HOPS

1913

Sacramento Valley	.15@16
Sonoma-Mendocino	.17@17½
Oregon Clusters	.16@17
1914 Contracts	.14@15½

HAY

Under date of June 27, Scott, Magner & Miller say:

Receipts of hay for the past week were 2,540 tons; last week, 1,597 tons. Very little interest has been shown during the week. Consumers are not ready to lay in any quantity as yet, and receipts have been hard to dispose of to advantage. Fancy Wheat and red oat of the old crop are extremely scarce, the majority of the old crop arriving being of the medium or poorer grades. The first two cargoes of new second cutting alfalfa from the river arrived during the week, but it has been very difficult to place as dairymen are not laying in any stocks as yet. A few carloads of new straw arrived and were offered at 50c. No change in prices to note during the week.

We quote the average wholesale prices on carload lots of hay on today's market as follows:

Fancy Wheat Hay, lt. bales	13.00@14.00
No. 1 Wheat or Wheat and	

Oat	11.00@12.00
No. 2 Wheat or Wheat and Oat	9.00@11.00
Choice Tame Oat	11.00@12.00
Other Tame Oat	8.00@10.00
Barley	6.00@8.00
Wild Oat	6.00@8.00
Alfalfa	6.00@9.00
Stock Hay	5.00@6.00
Straw, new	40@50
New Crop Wheat Hay	7.50@10.00
New Crop Volunteer	5.00@7.50

GRAIN

Wheat, Cal. Club	1.57½
Corn, Eastern Yellow, blk.	1.73¾@1.75
Egyptian, White Corn	1.70@1.72½
Barley, Feed	92½@97½
Oats, white	1.27½@1.30
Oats, red	1.00@1.10
Millet	2¼@2½
Flaxseed, lb.	4@4½
Mustard, Brown	4@4¼
Sunflower	4@4½
Vetch Seed	3@3½

FEED STUFF

Alfalfa Meal, car lots	17.50@18.50
Bran, ton	25.00@26.00
Feed Cornmeal, ton	41.00@41.50
Cracked Corn	41.00@41.50
Rolled Barley, ton	21.50@22.00
Rolled Oats, ton	37.00@37.50
Middlings	32.00@33.00
Shorts	26.50@27.50
Oilcake Meal	33.00@34.50
Cocoanut Meal	25.00@26.00
Linseed Oilcake Meal	27.00@28.00

Citrus Fruit Market

LOS ANGELES, July 1, 1914.

Shipments of Valencias to July 1st were practically normal, that is, 35 per cent of the fruit had been forwarded at that time. Navels are practically cleaned up; a very few Mediterraneans yet to go. The next few weeks will probably be the most trying during the entire season; the supply of peaches and all small fruits is large, and all markets are now well supplied. A little later the orange will come to its own and better prices may obtain. For the present the waiting game is the only one to play. Cooler weather and immense quantities of foreign lemons are combining to depress lemons slightly. The middle west is, however, receiving large quantities at satisfactory prices.

Shipments.

Shipments of oranges from Southern California to date since November 1, 1913, 31,003 cars; lemons, 2,189; total, 33,192. To same date last season, 11,756 oranges; 1,734 lemons; total, 13,490. Total of all citrus fruits from this state two years ago, 29,612. From Tulare county this season, oranges, 5,854, cars; lemons, 30; total, 5,884. To same date last season, oranges, 1,855 cars; lemons, 107; total, 1,962.

NEW YORK, June 29.—Twentyfive cars Valencias, 15 navels, 5 sweets, 1 seedlings, 1 St. Michaels, 8 mixed cars sold. Market strong and higher on all varieties. Cloudy.

VALENCIAS—

	Avge.
Cockofthewalk	$2.70
Titus Ranch, San Marino G.	2.20
Native Pronto, San Marino G.	1.80
Native Son Co-Operative O. G. A.	2.70
Hollywreath Co-Operative O. G. A.	2.35
Bronco W. America Ft. Co.	2.80
Green Banner Sutherland Ft. Co.	2.75
Native Sutherland Ft. Co.	2.35
Green Banner Sutherland Ft. Co.	2.65
Native Sutherland Ft. Co.	2.35
Mt. of Olive Growers Ft. Co.	2.70
Olive Heights Growers' Ft. Co.	2.45
Angeles Growers Ft. Co.	2.30
Royal Crest Stewart Ft. Co.	2.25
Old Mission xf. Chapman	3.50
Old Mission fy. Chapman	2.70
Golden Eagle, Sd. Chapman	2.20
Mission Bells A. B. Chapman	2.35
Mission Memories, Chapman	2.20

NAVELS—

Colony Blue Cucamonga O. G. A.	$1.50
Colony Red Cucamonga O. G. A.	1.30
Blue Top Mtn. Slope Groves	1.35
Golden Cross O. K. Ex.	2.95
Golden Star O. K. Ex.	2.35
Red X O. K. Ex.	1.90
Parrot S. A. Ex.	1.60
Golden Star O.K. Ex.	2.35
Red X O.K. Ex.	2.00

SWEETS—

Cream	$1.65
Minnehaha	1.45
Golden Flower	1.50
Golden Fruit	1.30

ST MICHAELS—

Golden Flower	$1.85
Golden Flower	1.75
Athlete	2.15

LEMONS—

Bishop	$2.75

CHICAGO, June 29.—Lemons, California, new, 3.00@8.00 per box. Oranges, California navels, 2.00@3.00. Grapefruit, per box, 2.25@3.75. Pineapples, per crate, 2.25@3.75. Peaches, 1.50@2.00 per case. California cherries, per eight-pound box, .75@1.50. Apricots, per box, 75@1.10. Peaches, 80@1.10. Cantaloupes, 1.00@1.75 per standard crate. Watermelons, 250.00@300.00 per car. Blackberries, 2.00@2.50 per twenty-four-quart case. Red raspberries, 2.50@3.50 per twenty-four pints. Black caps, 1.25@1.50 per twenty-four pints. Gooseberries, 40@75 per sixteen-quart cases. Blueberries, 2.50@3.50 per sixteen-quart cases.

PHILADELPHIA, June 29.—Thirteen cars sold. Warm. Market is advancing.

VALENCIAS—

	Avge.
Checkers, C.C., Lindsay	$2.25
Hetch Hetchy, C.C., Lindsay	1.95
Ft. Pitt, A.C.G., C.Oak	2.55
Mt Whitney, T.C., Success	2.30
Craigynos, C.C., Ex	2.20
Pet. S.D., San Dimas	2.75
Perfection, Highgrove, O.G.A.	2.35
Royalcrest, Stewart Ft. Co.	2.10
Mallard, Randolph Ft. Co.	1.70
Oakleaf, T.C., Ponca	1.90

CINCINNATI, June 29.—Cool. Market steady on oranges, easier on lemons. Two cars Valencias, 3 sweets, 1 seedling, 2 lemons sold.

VALENCIAS—

	Avge.
Chimes, C.C., Lindsay	$2.50
Hetch Hetchy, C.C., Lindsay	2.30
Dolores, C.C., Lindsay	2.25

LEMONS—

Centauria, V.C., Santa Paula	4.80
Housewife, Riv. Orl. Sta.	4.65
*Housewife, Riv. Arl. Sta.	3.45
*Pride of Cal., Riv. Arl. Sta.	3.55

Sweets—Homer, $1.95; Camel, $1.60; Puritan, $1.70; Yacht, $1.55; Blue Circle, $1.95; Golden Circle, $1.70. Seedlings—Don Quixote, $1.10.

*Lemonettes in half boxes.

ST. LOUIS, June 29.—Clear and warm. Market steady on lemons. Eight cars oranges, 3 cars lemons sold.

VALENCIAS—

	Avge.
Searchlight, O.R., Orange	$2.40
S.S. brand, O.R., Orange	2.10
Carmencita, S.T. Ex.	2.80
Las Palmas, S.T. Ex.	2.35
Golden Pheasant, Ind. Ft. Co.	2.60
Golden Rod, Highgrove O.G.A.	2.50
S.S. brand, O.R., Orange	2.10
Colombo, S.T. Ex.	2.50
Peppita	2.45
Wildflower, Randolph Ft. Co.	2.05

LEMONS—

Questa, Q.C., Corona	$3.90
Lemon Heights, O.R., Tustin	5.15
Evergreen, O.R., Tustin	4.35
Family, Q.C., Corona	3.80
Hillcrest, O.R., Tustin	4.80
Minnehaha	3.30

Jaffas—Rey, $2.15; Tunnel, $1.85. Craftons—Tunnel, $2.00. Sweets—Belt, $2.05. Grapefruit—Carmencita, $2.05.

CLEVELAND, June 29.—Three cars Valencias, 2 navels, 2 sweets, 3 mixed cars and 2 cars lemons sold. Market advancing on Valencias, firm on good stock sweets, unchanged other varieties of oranges. Market is declining on lemons. Cold, raining.

VALENCIAS—

	Avge.
Dolores, C.C., Lindsay	$1.75
Ranchito, S. T., Rivera	2.65
Checkers, C.C., Lindsay	2.75
Sugarloaf, S.O. O.C.A.	2.00

LEMONS—

Homer, Q.C., Corona	$4.75
Prarie Chicken, A.H., Prenda	3.40
Squirrel, A.H., Prenda	4.05

Navels—Campfire, $1.20; Quail, $1.65; Quail, $1.15; Coyote, $1.15; Sugarloaf, $1.25; Industry, $1.20; Mutual, 85c. Sweets—Pala Bells, $1.45; Pearl, $1.15; Gold Buckle, $2.00; Industry, $1.20; Mutual, 95c. St. Michaels Halves—Camelia, 75c; Quail, $1.05. Bloods—Camelia, 90c.

BOSTON, June 29.—Fifteen cars oranges, 2 cars lemons sold. Cool, cloudy. Market doing better on oranges, easier on lemons.

VALENCIAS—

	Avge.
Trail, A.C.G., Lamanda Park	$2.65
Pioneer, C.G., Lindsay	2.85
EEE, S.T., Leffingwell	2.45
Tunnell, S.T., Fernando	2.40
Priscilla, R.H., Highland	2.90
Aurora Amer. F. Dis.	1.95
Green Banner, Sutherland Ft. Co.	2.50
Green Banner, Sutherland Ft. Co.	2.50
Jupiter, Amer, F. Dis.	2.35
Choice	2.10
Canyon, A.C.G., Lamanda Park	2.35
XXX, S.T., Leffingwell	2.65
Rey, S.T., Fernando	2.80
Rooster, O.R., Orange	3.10
Golden Bar, R.H., Highland	2.60
Alpha, R. Henderson	2.75
Sapho	2.50
Giltedge	2.45
Native, Sutherland Ft. Co.	2.15

LEMONS—

So. Beauties, QC., Corona	$3.95
Princess, Q.C., Corona	3.75
Laurel, Q.C., Corona	4.30

Sweets—Carmencita, $1.80. Seedlings—Tiger, $1.55; Floral, $1.40. Navels—Golden Star, $2.75; Golden Cross, $3.00; Golden Star, $2.80. St. Michaels—Hobo, $1.65.

There are still some people who imagine they can tell the sex of eggs before they are hatched or as soon as they are laid. Some tell us that long eggs always hatch females while others say that such eggs invariably hatch males. When it is considered that each hen shapes her eggs according to the condition of her ovaries, and uniformly lays eggs of similar shape, the absurdity of the shape theory becomes apparent.

In Paris markets the eggs are dated and one pays according to the freshness, so that it is possible to be certain of newly-laid eggs; or if it is necessary to be economical, yesterday's eggs or the day's before are offered at a reduction.

There is almost as much difference between families or strains of each breed as between the different breeds. Therefore, receive with some allowance the praise or condemnation of any breed.

Books

This list of helpful, instructive and interesting books is prepared by us with the purpose of enabling the Cultivator readers to supply themselves at the lowest possible cost. The great value of many of these is so well known as to need no comment from us. Some of the new books which we have added to the list this year deserve special mention. "Co-Operation in Agriculture," by G. Harold Powell, should be in the hands of every producer of farm products. "Farm Sewage," by Santee, will aid many in solving a perplexing problem. "Farm Manures," by Thorne, is decidedly valuable. We state sincerely that no orchardist can afford to get along without "The Pruning Book," by Bailey. We have had much inquiry for a book on keeping farm accounts—we can supply a good one now. The imported book, "Insecticides, Fungicides and Weedkillers," by Bourcart, is a marvel of completeness. The rapidly increasing use of gasoline engines, automobiles and tractors by the farmers has demanded reliable treatises on these subjects. "The Gasoline Engine on the Farm," by Putnam, "The Modern Gasoline Automobile," by Page, and "Traction Farming and Traction Engineering" are exceptionally complete, well illustrated and easily understood. Don't overlook the "Cement Workers' Handbook"—it's "worth its weight in gold." Every book on this list has the endorsement of the California Cultivator.

	Book Alone.	With Cultivator.	Free for the following number of new Subscribers.
American Grape Growing, by Hussman	$ 1.50	$ 2.25	3
Arid Agriculture, by Buffum	1.50	2.35	3
Book of Alfalfa, by Coburn	2.00	2.75	4
California Soils, by Prof. Gilbert E. Bailey	1.50	2.20	3
Cyclopedia of Agriculture, by Bailey	20.00	20.00	40
Cement Worker's Handbook	.50	1.30	1
Citrus Fruits and Their Culture, by Hume	2.50	3.25	5
Co-operation in Agriculture, by Powell	1.50	2.40	3
Domestic Water Supplies on the Farm, Fuller	1.50	2.30	3
Date Growing, by Popenoe	2.16	2.85	4
Feeds and Feeding, by Henry	2.25	3.00	5
Farm and Garden Rule Book, by Bailey	2.17	2.90	4
Farm Sewage, by Santee	.50	1.40	1
Field Manual for Beet Sugar Growers, Adams	1.00	1.85	2
Fruit Growing in Arid Regions, by Paddock	1.50	2.40	3
Farm Manures, by Thorne	1.50	2.25	3
Farm Friends and Farm Foes	.90	1.85	2
Farmers of Forty Centuries, by King	2.15	2.95	4
Fertilizers, Source, Purchase and Use (Smith)	1.00	1.90	2
Garden Helps, by Hall	.75	1.65	2
Gasoline Engine on the Farm, by Putnam	2.00	2.60	4
Garden Book of California (Ornamental) by Angier	2.00	2.85	4
How to Keep Farm Accounts	1.00	1.75	2
Hand Book for Farmers and Dairymen, by Woll	1.50	2.30	3
Irrigation and Drainage, by King	1.50	2.40	3
Insecticides, Fungicides and Weed-killers	4.50	4.75	9
Modern Gasoline Automobile, by Page	2.50	3.10	5
Milk and Its Products, by Wing	1.50	2.40	3
Making the Farm Pay, by Bowsfield	1.15	1.95	2
Nursery Book, by Bailey	1.50	2.40	3
Practical Garden Book, by Bailey and Hunn	1.00	1.90	2
Primer of Irrigation, by Anderson (paper cover)	1.00	1.85	2
Pruning Book, by Bailey	1.50	2.40	3
Story of the Soil, by Hopkins	1.50	2.35	3
Soils, by Hilgard	4.00	4.75	8
Swine in America, by Coburn	2.50	3.25	5
Traction Farming and Traction Engineering	1.65	2.25	3
Science and Practice of Cheese Making	1.75	2.50	4
Soil Fertility and Permanent Agriculture, Hopkins	2.70	3.50	6
POULTRY, ETC.			
Built and Used by Poultrymen (excellent)	.50	1.25	1
Belgian Hare Guide	.25	1.20	1
Ducks and Geese	.75	1.65	2
Leghorns, All Varieties	1.00	1.85	2
Minorcas—Every Comb and Color	.50	1.45	1
Practical Rabbit Keeping	1.25	2.10	2
Perfected Poultry of America	2.50	3.00	5
Poultry Houses and Fixtures	.50	1.40	1
Pigeons—All About Them	1.00	1.90	2
Reliable Poultry Remedies	.25	1.20	1
Rhode Island Reds	.75	1.65	2
Turkeys	.75	1.65	2
Western Poultry Book, by Mrs. Basley	1.00	1.75	2
BEES			
A B C and X Y Z of Bee Culture	$ 1.50	$ 2.35	3
Beekeeper's Guide, by Prof. Cook	1.20	2.00	3

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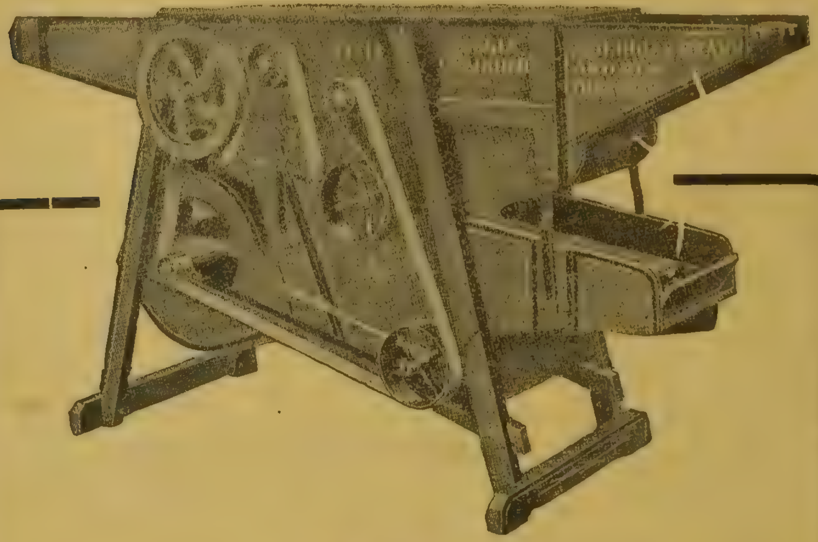

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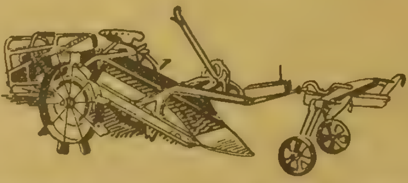

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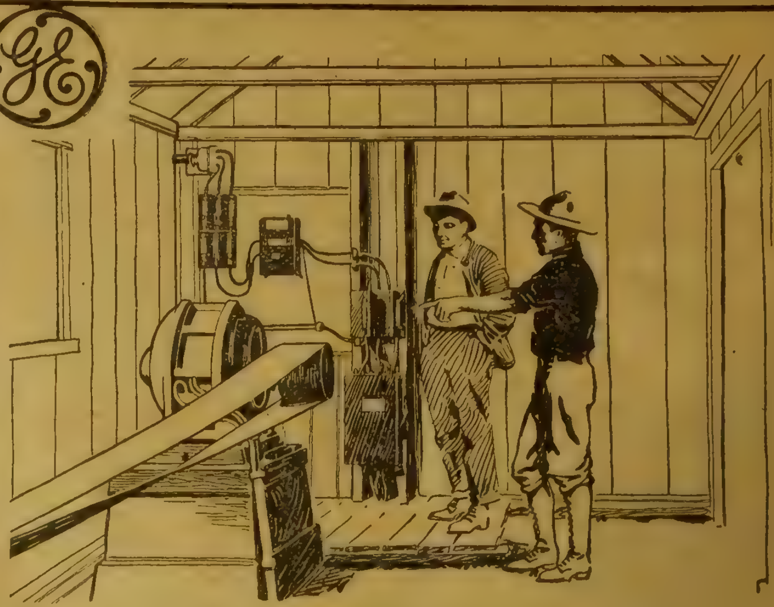

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As long as power is supplied this motor runs without attention other than refilling its reservoirs every month. This motor is belted to a 6-inch vertical pump on the ranch of Mr. Edward Gilman, at Edenvale, Cal. This is Mr. Gilman's second purchase of a G-E motor. He will tell anyone what he told us:

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> Gentlemen:—
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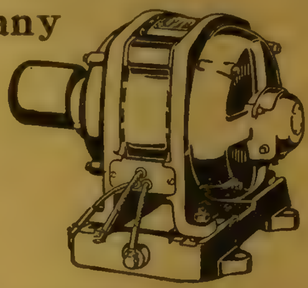
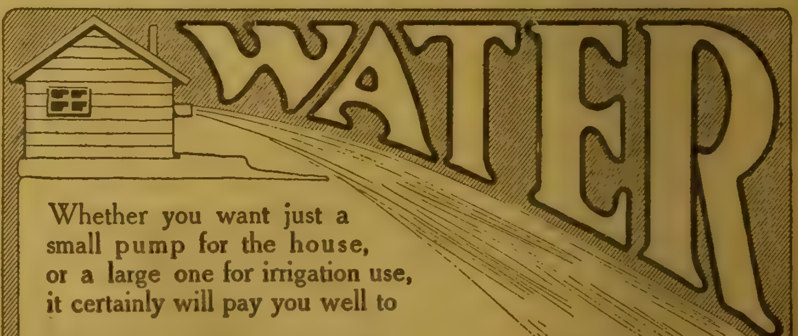


The General Electric Company will gladly answer all questions relating to the use of electric power for ranch and market garden irrigation.

Address nearest office. 4958



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The safe way is to get advice from pump specialists like ourselves. As manufacturers we have solved hundreds of pumping problems—and our accumulated experience is at your command. Our advice may save you both money and trouble. We manufacture and sell

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Rural Californian combined with California Cultivator

An Illustrated Weekly Magazine, Devoted to the Rural Home and Ranch

LOS ANGELES July 9, 1914 SAN FRANCISCO

Capay Valley, Yolo County

Yolo is One of the Rich Counties of the Great Central Valley of California. Its Grain Fields, its Orchards and its Dairies are Making it and Their Owners Richer Every Year

CYANEGG FOR FUMIGATION R&H CCo TRADE MARK

Kill the Scale

CYANEGG FOR FUMIGATION R&H CCo TRADE MARK

CITRUS TREES CANNOT produce GOOD CROPS of SOUND MERCHANTABLE FRUIT while SUPPORTING CROPS of SCALE (Coccus Citricola or any other kind.)

CLEAN UP THE GROVES

The CLEANED trees, in GRATEFUL APPRECIATION, WILL produce fruit in ABUNDANCE of a QUALITY that will GIVE the GROWER JOY and FILL his POCKETS with GOLD.

FUMIGATION WITH HYDROCYANIC ACID GAS

will CORRECTLY CLEAN Citrus Trees (no other known method will.) NOT EXPERIMENTAL but a PROVED SUCCESS. TWENTY-FIVE YEARS of practical experience has PROVEN the VALUE OF FUMIGATION; ask any successful citrus fruit grower in Southern California.

CYANEGG FOR FUMIGATION R&H CCo TRADE MARK

Mr. Hemphill, manager for C. C. Chapman, Fullerton, Cal., said: "Correct fumigation spells clean trees, more and better fruit, highest prices in the market, and larger returns for the grower."

Mr. O. B. Griffin, assistant manager Leffingwell ranch, Whittier, Cal., said: "The fumigation of citrus trees is a profitable investment for the citrus fruit grower, and properly done will bring large returns."

For information regarding chemicals and supplies, address

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REPORT OF THE CONDITION OF

The First National Bank of Los Angeles

At the Close of Business, June 30, 1914

RESOURCES:

Loans and Discounts	$14,830,759.93
Bonds, Securities, etc. (bonds only)	1,271,250.00
U. S. Bonds to Secure Circulation	1,250,000.00
Premium on U. S. Bonds	None
Customers' Liability Under Letters of Credit	219,013.96
Furniture and Fixtures	176,827.53
Cash and Sight Exchange . . .	**$6,970,764.49**
TOTAL	**$24,718,615.91**

LIABILITIES:

Capital Stock	$ 1,500,000.00
Surplus and Undivided Profits	2,445,493.96
Circulation	940,400.00
Reserved for Taxes, etc	32,179.65
Letters of Credit	219,463.96
Deposits	**$19,581,078.34**
TOTAL	**$24,718,615.91**

Commercial and Travelers' Letters of Credit Issued

INTEREST PAID ON TIME DEPOSITS

I, W. T. S. Hammond, Cashier of the above-named bank, do solemnly swear that the above statement is true to the best of my knowledge and belief.

Stoddard Jess	J. C. Drake	C. W. Gates	J. O. Koepfli
John P. Burke	Frank P. Flint	H. Jevne	F. Q. Story

DIRECTORS.

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Why not sell your high-priced land and buy finest irrigated lands in Stanislaus County on ten years' time? 20-ACRE TRACTS — $350 DOWN — $350 YEARLY. Ideal for garden truck, alfalfa, fruit, dairying, chickens, ample water to high point each tract. Only 2 miles City Oakdale, with 3 railroads, canneries, creamery, markets, high school, 2 banks, 2 newspapers, good roads, splendid climate. Success and increased value assured. Every buyer satisfied and making good. Circulars free. C. H. LEHMAN, MARSH-STRONG BLDG., LOS ANGELES.

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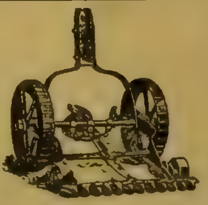


THE CLIPPER
There are three things that destroy your lawns. Dandelions, Buck Plantain and Crab Grass. In one season the Clipper will drive them all out.
Clipper Lawn Mower Co.,
Dixon, Illinois

Burbank Cactus
HALF PRICE
and Quality Trees — Agents Wanted
Trees on 3 yr. Roots
CASH NURSERIES, Sebastopol, Cal.

California Cultivator

Rural Californian combined with California Cultivator

Vol. XLIII No. 2 LOS ANGELES: THURSDAY, JULY 9, 1914 One Dollar Yearly

Table Grape Shippers Are Sensible

They Are Combining to Insure the Shipment of Only First-Class Ripe Grapes Which Shall Contain at Least 17 Per Cent of Sugar. Form of Contract Which is Being Signed Up.

A most sensible movement is under way in the San Joaquin Valley amongst the table grape growers. They suffered greatly last year because unscrupulous shippers persisted in forwarding unripe, sour grapes, some of which sold for good prices, but because of inferior quality destroyed, or at least greatly injured, later markets.

To aid in correcting this the California Green Fruit Association has been organized, and at a meeting recently held in Fresno the following contract was indorsed and signed by many:

Standardization Contract

This agreement made and entered into this 29th day of June, 1914, by and between the California Green Fruit Association, having its principal place of business at Fresno, California, party of the first part, and the undersigned green fruit shippers doing business in the territory hereinafter described, parties of the second part, witnesseth:

That during the shipping season of 1914 the undersigned shippers, parties of the second part, agree not to accept for shipment, nor to ship outside of the State of California, from the territory covered by this agreement, any Malaga, Thompson or Muscat grapes containing less than seventeen per cent (17 per cent) sugar as determined by Balling's saccharometer.

And the said parties of the second part further agree to use their best efforts through their representatives and managers within the territory covered by this agreement to secure the shipment of sound merchantable fruit only; and all parties thereto also agree to use their best endeavors throughout said territory to secure the shipment of sound merchantable fruit only, and to secure the acceptance and the signing of this agreement by all firms and individuals shipping fruit from or handling fruit within said territory.

The district and territory above referred to within which this agreement shall be operative shall be the San Joaquin Valley, from the southerly line of San Joaquin County south to Bakersfield.

In order to facilitate the carrying out of the terms of this agreement, it is further mutually understood and agreed by and between the parties hereto that there shall be employed by said party of the first part a chief inspector, and such other inspectors as may from time to time be necessary in order that there may be one inspector at each shipping point within the territory covered by this agreement, unless in the opinion of the chief inspector two or more points are sufficiently close together to be effectively covered by one inspector, in which case there shall be but one inspector for said points so in proximity to each other as aforesaid; the employment of said inspectors to continue so long as in the judgment of the executive committee of the California Green Fruit Association the condition and shipment of the fruit herein referred to shall warrant the same.

It shall be the right and duty of said inspectors to inspect all fruit at place where the same shall be packed, in order to ascertain that said fruit is up to the standard established by this agreement, and any of the grapes covered by this agreement and found to contain less than seventeen per cent (17 per cent) sugar as herein provided shall be refused, and shall neither be accepted nor shipped by any of the respective parties of the second part. Should, however, any dispute arise between any inspector and the party of the first part, or any of the respective parties of the second part or any grower of grapes covered by this agreement, then and in that event the chief inspector shall be called in to determine such dispute and the judgment and determination of said chief inspector in the premises shall be binding and conclusive upon the parties thereto.

After any of the grapes covered by this agreement shall have been inspected and passed by any of the inspectors employed as herein provided for, then each crate or package containing such grapes so inspected and passed aforesaid shall be by the shipping company receiving such fruit for shipment stamped with a rubber stamp containing the words: "Inspected as to ripeness by the California Green Fruit Association."

In order to facilitate the inspection of the fruit as herein provided, it is expressly understood and agreed that all of the inspectors aforesaid shall have access at all times to any packing house or packing shed owned or controlled by any of the parties hereto, and to the grapes therein situate, for the purpose of inspecting said fruit and making tests thereof. Also shipping companies shall notify chief inspector at his office twenty-four hours before packing or shipping commences at each or any point.

All of the inspectors herein provided for shall be employed by and be under the supervision and direction of the party of the first part, and their compensation shall be fixed by said party of the first part. One half of the cost of such inspection, including the compensation of such inspectors, shall be paid by said party of the first part, and the remaining one-half thereof shall be paid by the undersigned shippers, each of the said shippers paying such proportion of said one-half thereof as the amount of fruit covered by this agreement and shipped by him bears to the whole amount of such fruit shipped. Said payment of said one-half of such costs to be made by said shippers as follows: Each of said shippers shall make to the said chief inspector, (to reach said inspector not later than twelve o'clock noon on each Monday during the season covered by this agreement), a report of the numebr of crates of each variety of grapes herein referred to shipped by such respective shipper during the previous week, and said chief inspector shall upon such reports apportion the proportionate costs of such inspection to the respective shippers, parties hereto, and immediately thereupon send to each of said shippers a notice setting forth the total number of crates of each variety of grapes covered by this agreement shipped by all of the parties hereto during said preceding week, together with the total cost of inspection during said preceding week, and the amount due from the respective shipper so notified as his proportionate cost thereof, and upon receipt of such notification the amount specified therein shall be immediately paid by said shipper to said California Green Fruit Association. A final apportionment covering all matters not previously included shall be made at the end of the shipping season.

It is understood and agreed that this agreement is intended to cover only shipments outside of the state of California from the territory hereinbefore specified in this agreement.

This agreement is reduced to writing for the purpose of having the terms and conditions thereof fully and clearly understood by and between all of the parties hereto. The fulfillment of this agreement is left to the honor of each of the respective contracting parties, and the penalty for violation of this agreement is the forfeiture thereof by such violator.

In witness whereof, the parties hereto have hereunto set their hands and seals the day and year in this agreement first above written.

A Letter

In order to secure as liberal support for the above contract as possible and to save expenses, the growers are appealed to through the mails in the following letter.

Mr. Green Fruit Grower:

This letter refers to your business particularly and we ask you to give it consideration.

The first cost for freight, icing, packing, loading and selling commission on a car of east-bound grapes runs up to the neighborhood of $700 to $750.

This first cost has to come out of your grapes before you get any money for your product, unless you sell cheaply enough for cash to induce a speculator to buy from you.

Only a small percentage of the crop is purchased by speculators under any circumstances.

With the increased Malaga acreage coming into bearing, any one year of a full crop (and the present 1914 indications point to a full crop) will present problems that can be met with any degree of success only by the growers organizing, to the end that numerous abuses of the past may be corrected.

The California Green Fruit Association has been organized for this purpose.

The capital stock is only $25,000. No one is eligible as a shareholder except a bona fide grower of green fruit (trees or vines). The stock will be issued in $1.00 shares. Growers can subscribe for one share for each acre of shipping fruit owned.

The board of directors is composed of 15 growers so that every part of the green fruit district can be represented. No salaries or fees are paid to any officers or directors.

You, as a shareholder with other growers, who now are stockholders, will be in control of this company and dictate its future policy.

Why was this company organized?

It was organized for the purpose of consolidating the growers of fresh shipping fruits, in the Malaga belt of the San Joaquin valley, so that a united front could be presented against any interest, or interests, acting to the detriment of the grower's end of the green fruit industry.

No matter how small your acreage may be, your welfare is concerned in this movement. Your acreage with numerous other small parcels aggregate thousands of acres and the only way in which you can be heard is to combine with your fellow growers and present a united front and demand a correction of a number of existing abuses which threaten your prosperity and that of every other grower of shipping grapes.

The growers who formed the California Green Fruit Association are more or less dependent on the returns from their shipping grapes. They have keenly realized in the past that as the increased acreage came into bearing the present system of marketing followed by the middlemen (while insuring full pay to the transportation companies, packing companies, and the eastern auction companies), threatens to leave little or nothing for the actual producer. They realize that a few growers alone could not command the respect of the middlemen and insist successfully on the correction of patent abuses in their distributing methods.

To get the green fruit growers in this district together and qualify their spokesman to speak with a 2000-carload voice would make a noise loud enough to be heard in Sacramento and as far as the New York city auction rooms. After securing a hearing, self interest on the part of the middlemen will actuate them in cooperating with our association to eliminate any and all abuses in the trade.

The above answers the question why we organized.

Self interest on your part dictates that you join our association and hold up our hands. The work our association proposes to do means more money for your crop year after year. To let matters drift as they have in the past means assuredly red ink for you and hundreds of other growers.

What Can the California Green Fruit Association Do?

It can compel the middlemen to adopt a more scientific system of distribution in order to prevent gluts in the auction rooms and consequent ruinous prices for your grapes.

It can help to widen the private sales market in order to reduce surplus quantities of grapes being dumped into the auction rooms for any old price such a situation would bring.

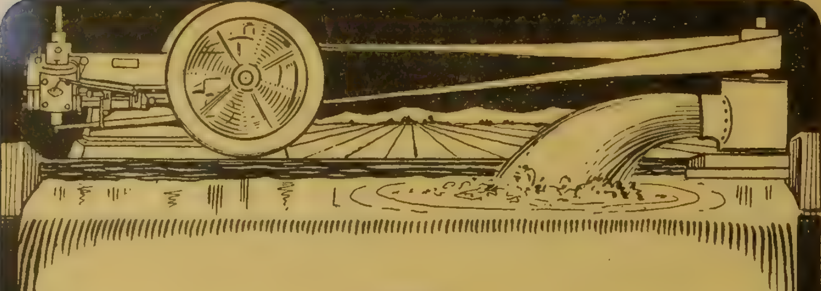
Where packing charges, transportation charges and icing charges prove exorbitant after investigation, the association will be powerful enough to secure just reductions.

Where undue charges are being made against our product in the eastern auction rooms, this association will be strong enough to correct such abuses where they may exist.

With proper support from the growers we can stop the shipment out of this belt of early green sour grapes, a practice which reacts at a loss to every grower, the shipper of sound sweet grapes as well as the shipper of sour grapes.

We propose at the next meeting of

(Continued on Page 43.)



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Extra Choice Pomelos, 3-4 and up, 60 cts.

Spineless Cactus, 12 slabs $1.00; 100 for $5.00

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One, two and three years old. Variety and quality guaranteed.

"The olive is the best paying fruit grown in California"

FRED L. BORUFF **San Fernando, Cal.**

When writing advertisers, mention The Cultivator.

Citrus and Tropical Fruits

THE NEMATODE WORM ON THE ROOTS OF CITRUS TREES

By E. E. Thomas, Before Citrus Institute at Riverside.

For a number of years the citrus growers have been concerned with a very obscure trouble which attracted attention, especially in the older sections. This trouble has generally been called mottle leaf, as one of its characteristics is the yellowing of the leaves between the veins, with the green color only along the mid rib and lateral veins, giving the leaf a mottled appearance.

So prevalent has this become throughout all of the citrus sections, and especially among the older groves, that a project was outlined for the study of this problem. Among other points to be investigated was that of possible parasite injury to the tree.

Upon careful examination the roots of many citrus trees were found to be infested with nematode worms. These were first brought to the writer's attention by J. R. Hodges, horticultural inspector of Covina, who had found nematodes in the soil scraped from the roots of trees with badly mottled leaves. Twice previously nematodes had been reported in connection with citrus trees. The common root knot or garden nematode "Heterodera radicicola" was reported as occurring on citrus roots by J. C. Neal in 1889 and a closely related variety was also reported on citrus roots by Gaston Lavergne in Chili.

The nematode, which is a microscopic worm living in the soil, has been a problem for many years. Up to the present time many varieties are known, and they have been the subject of much study on the part of scientific men all over the world.

Two of the most common varieties are the "Heterodera radicicola," or root knot nematode, and the heterodera schachtii, or beet nematode.

The first attacks the roots of plants, causing the root to swell and form a knot or gall. Upon breaking open one of these galls one will see a pearly white pear-shaped object about half as large across as a pin head. This is the adult female. Each female is capable of laying several hundred eggs, 500 having been counted by Dr. E. A. Bessey, professor of botany in Michigan agricultural college, who has made a very extensive and thorough study of this variety.

Upon hatching the young larva will enter the soft-growing end of a root by the aid of a spear with which it is provided and proceed in many cases to the center of the root: Here the females will develop, causing more knots on the roots.

This variety is very harmful to practically all garden plants and is also found on many trees. It has been found in nearly every country of the world and in some localities is so abundant that varieties of plants susceptible to its attack cannot be grown with any success.

The other variety mentioned, the beet nematode, is also widely distributed, especially in beet growing districts. Unlike the root knot variety, it does not form knots or galls on the roots. The female, which is lemon-shaped and of a brownish color, is not found entirely within the root, the anterior portion only is imbedded in the tissues. Beets affected with this nematode are stunted, and if a field is badly infested it is worthless.

From these two varieties alone we find that nematodes sometimes damage the root of the host directly, not only by crawling inside the tissues and causing knots, but also by piercing the root with the mouth parts and feeding upon it.

The citrus nematode, which has been named "tylenchulus semipenetrans" by Dr. N. A. Cobb, of the United States department of agriculture, while similar in some respects to those already mentioned, belongs to another genus and has its own individual characteristics.

One point stands out very clearly, and that is the fact that the citrus roots do not develop galls or knots, so far as observed by us. This is, therefore, different from the cases noted by J. C. Neal and Gaston Lavergne, in which they state that galls or knots were found on the roots.

On close examination of our specimens it has been found that many of the nematodes pierce the root and push their way into the tissues for quite a distance. In some cases the head of the nematode was seen to have penetrated six cells into the root. Upon further examination it has been found that the number of nematodes which pierce a rootlet is very great. In some cases as many as 60 have been counted on a rootlet no larger than an ordinary pin one inch long.

The females are of a slightly brownish color and when mature the main portion of the body is irregularly elliptical and not quite symmetrical, the posterior portion narrowing abruptly into a slender obliquely placed tail.

They are not always attached to the root, but may be in the soil surrounding it and seem to be enveloped in a gelatinous or slimy material. A number are generally to be found together, with this gelatinous material surrounding the whole group. This enveloping substance is probably a protection for the eggs and young larvae.

As many as 20 females have been noticed attached to the root in one group. This bunching or grouping not only occurs with the females, but is also noticeable with the males, for they are very often found in groups of from six to eight or more, piercing the root close together. Many groups have also been seen in which there were both males and females, with the anterior portion of the body imbedded in the tissues of the root. Cross sections of the root have been made and the nematodes were seen penetrating the tissue.

Although not always a sure indication that a rootlet is infested with nematodes, a very suspicious symptom is the fact that the soil particles cling to the root and do not readily fall off when it is shaken. This is due to the fact that the soil grains cling to the gelatinous material and in many cases will not be removed when washing the roots in water even with a moderately fine brush. Very frequently upon microscopic examination a group of nematodes is found attached to the root at this point.

A very incomplete survey of the distribution of the citrus nematode has been made in California, and it has been found in all of the principal citrus districts of the state, from San Diego county in the south to Butte county in the north. Since the publication of circular No. 85, issued in February of the present year by the agricultural department of the University of California, entitled "A Preliminary Report of a Nematode Observed on Citrus Roots and Its Possible Relation to the Mottled Appearance of Citrus Trees," the citrus nematode has been found at Valencia, Spain, in three countries of South America, in Florida, Alabama, in the gardens of the United States department of agriculture at Washington, and probably at the present time in many other sections.

Trees infested with the nematode are found on varying types of soil, but as a general rule groves in a sandy or sandy loam soil are much more affected than those on a heavy soil. In some cases, however, the nematodes have been found in large numbers on the roots of trees growing in heavy soil, but at present this is not general.

There are a number of ways in which these nematodes might be carried from one tree to another or from one district to another district miles away:

The nursery stock may be affected in the nursery and when the trees are planted the soil of the new grove becomes infested also. This, of course, would especially be the case if the trees were balled in the nursery and planted this way. If the trees were planted with bare roots the number of nematodes introduced into the soil would be greatly diminished, but a few would be carried on the roots. A few cases in which they have been carried on the nursery stock have been noted, and groves located in different sections which were planted with stock from an affected nursery have been found to be badly infested with the nematode.

They may be carried by the irrigation water and rains. This has been noted in a number of cases. In one instance they have been carried for three-fourths of a mile, if not more, by this agency, as the trees first affected are in the highest grove on a hillside, and a narrow strip through five different groves is affected below them. This strip follows a slight depression through which all of the waste water as well as the storm water would run. On either side of this the trees are not affected to nearly so great an extent.

The nematodes may be carried on the cultivator, wagon wheels, horses feet, or any agency which would be able to carry soil from one place to another, and when a grove is once infested it may quickly spread from one section to another.

At present the exact damage caused by the citrus nematode is not known. We have a large number of observations as to the appearance of the trees badly affected with the nematode, but we do not know what other elements aside from this parasite may have figured in the process as determining factors. One fact is clearly demonstrated, that in a very large percentage of cases the feeding roots may be greatly damaged, not only by the nematode attack itself, but also by a fungus or various fungi which are enabled to enter the root where it is weakened by the nematode puncture.

In order to ascertain the extent of injury caused by the nematode, a series of pot experiments are being started. This experiment will be composed of 800 to 1000 plants including about a dozen different varieties of citrus stocks. In most cases, the seed will be planted in soil which is known to be free from the parasite and after the trees are started and all as nearly uniform as possible, one-half of them will be inoculated, while the other half will be kept free from their attack. The trees will otherwise be given the same care and the results carefully noted.

Work is also being conducted on the fungus to see if it alone would injure the tree.

As to the remedy for this pest very little can be said, for at present practically nothing is known.

With the beet and root knot variety a number of different methods for their control have been employed with more or less success. Among these is the application of carbon bisulphide to the soil after the crop has been harvested, but owing to the great expense this is only used where but a small portion of the field is affected. It cannot be applied around growing plants as the roots as well as the nematodes are killed. Where the parasite is scattered over a large area a beneficial practice is to plant simply a crop of some quickly growing plant the roots of which are very susceptible to the nematode's attack. A careful watch is kept of the crop and at the time when the larvae are most numerous and before maturity is reached it is pulled up and destroyed. In this manner large numbers of the pest are killed and they are thus held in check so that a profitable crop may be successfuly grown, even though the nematode is not entirely eradicated. Many chemicals beside the one already mentioned are very often used with more or less beneficial results.

Some of these methods have been successfuly applied on soil which at some season of the year is free from a crop. They have also been used on perennial crops having a dormant season, with varying results.

With citrus trees, however, a very difficult situation arises from the necessity to kill the nematode without injury to the root which is never dormant but grows at all seasons of the year. This is one of the problems that must be solved. As yet no method is known by which this can be accomplished. Experiments for this purpose will be carried on, and it is hoped that it will not be a great length of time before a remedy is found and the nematode is under control.

"I Can" is a hustler, a man self-made
Who turns off jobs galore;
"I Can't" lights his pipe, sits down
in the shade,
And bemoans the fact that he's poor.

FUMIGATION OF OLIVES

We are glad to give below a communication received from Eupope regarding methods of work on the olive in Spain. The olive industry of much of the Mediterranean country is being jeopardized by the lethargy of the growers regarding insect depredations. The more enlightened are finally awaking to the necessity of thorough work. One large firm at Valencia has published a table giving amounts of cyanide of soda for various fruit trees, almost identically the same as the Woglum schedule except that the numbers given instead of representing ounces give the measurements in grams and of course the distance over and around the trees is expressed in meters.

Our information received is through the Frankfort house of the Roessler and Hasslacher Co., and is as follows:

"Professor Woodworth seems to be of the opinion that the fumigation of olive trees will be of no particular importance. From the experiences we have gathered in Spain we must very positively oppose this judgment. Only very recently we have fumigated olive groves in Toledo and reached thereby very good results. For that purpose 15,000 kilos of sodium cyanide have been sold. Quite a nice quanity when you consider that fumigation found footing in Spain only two years ago.

"In Spain it has occurred, especially in the province of Toledo, that the Phloeotrips oleo has done great damage. What insects will have to be combated in the olive plantations of Italy we can not at present exactly say; the Italians name it 'mouches des olives' (olive fly). It is the 'Saissetia olea,' which also has strongly invaded many districts of Spain.

"At Toledo the campaign against the Phloeotrips was finished after having fumigated 30,000 olive trees with excellent results; which gives me hopes that in the next year there will be more fumigating and the formation of new companies which will require more equipment.

"While we lament being unable to state to you yet "the substantial monetary gains" in olive fumigation, we may positively conclude that the profit remains to the planter, otherwise they would not have started new fumigation companies, especially among the slow Spaniards.

"The result is that the value of crops of 68 orchards gives a total of 22,290 trees during the years 1910 and 1911, and before being fumigated was, more or less, Pts 121,888, while the crops of the same 68 orchards, or 22,290 trees, gave during the year 1912. after being fumigated, a larger crop, amounting to Pts 189,833.

"The net increase of crop after deducting the cost of fumigation was 36 per cent."

AVOCADOS IN SAN DIEGO COUNTY

Mr. M. F. Maurer of San Diego County reports the planting of 250 avocado trees on the mesa lands within a short distance of the Pacific. The orchard is owned by Messrs. Oscar Maurer of Berkeley and Dr. Charles W. Fish of Los Angeles. Fine large six-foot trees were planted. Mr. Maurer writes: "The whole district of Del Mar, near which the orchard is located, has been deeply interested in the new venture, and many visitors view with envy the brave little orchard, waving in the soft southern breezes."

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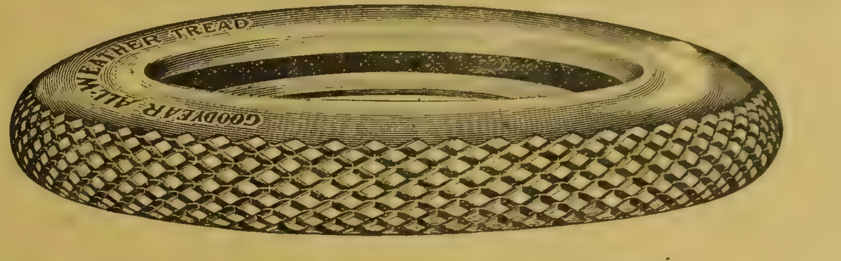

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This absorbing problem was threshed out to exhaustion in the Great National Conference on "MARKETING and FARM CREDITS," held in Chicago in 1913. The ablest men in the World participated in the deliberations and discussions.

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Deciduous Fruit Culture

THE WALNUT SITUATION

By California Walnut Growers' Association.

So many conflicting statements concerning the extent of the coming walnut crop are being published that we have deemed it proper at this time to advise you as to local crop prospects as we find them after a very thorough canvass of the entire walnut producing district of California.

It is undoubtedly true that the production per acre in many districts will be extremely light, but the walnut acreage in Southern California has greatly increased within the past few years so that a comparatively light crop will now bring the same tonnage as was produced by a normal crop just a few seasons back. A normal crop should now run nearly 30,000,000 pounds, as may be seen by making the following comparison: In 1911 there were 27,200 acres of bearing walnuts in California. The crop totaled 25,000,000 pounds, or about 900 pounds per acre. There are now approximately 33,000 acres in bearing. The same crop per acre would produce 29,700,000 pounds.

Up to the present time all conditions have been almost ideal for the growing nuts. The spell of hot weather experienced here in September, 1913, killed much of the fruit wood on the walnut trees, which caused a generally light setting, but the fine growing conditions we have had all season have brought the nuts up to very large sizes so that the weight per nut will probably be 25 per cent over last year's average. In 1913 the shipments of the California Walnut Growers' Association averaged 28 per cent No. 2's. Our estimate this season is but six per cent No. 2's. Barring the remote possibility of another freakish hot spell, California will ship the finest walnuts this year that have ever left the state.

Our present estimate for the coming crop is 10,529 tons, of which we estimate 7385 tons will be shipped by the associations and 3144 tons by all other shippers, which figures do not show any great falling off from other years, as evidenced by the table below and show an actual increase over 1913 shipments of first grades:

Year.	Pounds shipped.
1903	12,678,248
1906	15,096,887
1909	18,695,686
1911	25,070,340
1912	22,431,982
1913	*22,378,354
1914 Estimated	21,058,000

*Including 1,250,000 pounds off grades.

Beyond doubt the harvesting of the California crop will be at least 10 days earlier than usual and the association is hoping to complete all shipments not later than November 20th.

Summing the situation up from the trade's point of view, the season promises to be a most satisfactory one all around, excellent quality, large sizes and an early harvest. Then, too, the growers' ideas of prices are more conservative than they were a year ago. They are realizing that they must sell at a price that will permit the dealers to make a decent profit. While it is, of course, impossible to talk definite figures at this time, it is safe to say that the prices when opened will prove attractive to the trade. We have restricted the acceptance of S. A. P. orders even below the contract provision and therefore expect to make 100 per cent deliveries on all orders confirmed.

It is pleasing to report that last year's light carryover is rapidly moving out. Over 50 per cent of the associations' holdings have been sold in the last 60 days and the new crop will find a practically bare market.

Two additional local associations, the El Monte Walnut Growers' Association and the Garden Grove Walnut Growers' Association, have this year contracted with the California Walnut Growers' Association for the exclusive marketing of their output, thus materially increasing our tonnage. This gives us the marketing of the output of 18 local associations.

We have now secured a reduction in rate for canal shipments to the principal eastern seaboard ports. The new rate is 55 cents per 100 pounds. With insurance, freight from packing house to Los Angeles harbor and dockage, the total carrying charge on such shipments will run to about three-fourths of a cent per pound. We are still expecting a further reduction in the water rate to 50 cents.

Some of our large importers have been working faithfully during recent seasons in an endeavor to favorably introduce the Chinese (commonly called the Manchurian) walnut into this country. Last season their efforts were in a measure rewarded. The quality of these nuts was better than in former seasons. It is not our purpose here to compare the keeping qualities, hard shell, percentage of meat to shell, or difficulty in removing kernels of the Chinese nut as against the California walnut. These matters we leave to your own judgment. There is a certain trade that demands a lower priced walnut; the Chinese nut possibly fills this demand. We simply wish here to give you an idea of the extent of the industry in China in comparison with the American consumption. The average consumption of walnuts in the United States is now over 60,000,000 pounds annually. In 1912 the exportation of walnuts from all Chinese ports to all countries, as compiled by U. S. consular service, was 6,812,000 pounds, less than 12 per cent of the consumption of this country alone. The 1913 Chinese crop was one of the heaviest on record, many districts showing 100 per cent production increase over 1912. Imports to the United States were the heaviest ever made, approximately 5,200,000 pounds for the 12 months to June 1, 1914. The most authentic estimate we are able to obtain at this time places the total 1913 production of Chinese walnuts, all grades, at 8,140,000 pounds. From the above it will be noted that the bulk of the Chinese production is already being imported to this country. Most of those nuts which are not brought in here are of the poorer quality. In line with this we quote from a reliable report received from Chefoo, China:

"The best walnuts shipped from this province (Shantung, one of the largest walnut producing provinces) come from the southern section. Shippers tell us that the business is risky for the reason that the nuts do not run even. . . Most of the nuts go to Austria, Holland and Germany. They grow mostly wild in this province, that is, it can scarcely be said that they are cultivated for market purposes."

Early reports indicate that the 1914 Chinese crop will be a trifle lighter than last year. Twenty-five hundred tons will be the probable limit of imports if the quality can be held up to last year's standard. Of the importations of 1913 crop Chinese walnuts, 67 per cent arrived in port after January 1, 1914. The amount available for the holiday trade is therefore infinitesimal, and the total possible imports of Chinese nuts for a full season are comparatively too small to be a strong factor.

Our regular European representative leaves on an inspection tour of the walnut districts of France and Italy on August 1st. We will keep our trade fully posted as to conditions of these crops as fast as information is available.

Calgary, the convention city of the International Irrigation Congress this year, is the western gateway to the largest single irrigation system on the North American continent, and the second largest in the world. At the convention this year, October 5 to 9, delegates and visitors to Calgary will be given an opportunity to inspect this project as arrangements are being made for an excursion to Bassano during the week of the congress. This system occupied several years in building, and cost millions of money.

Eight-Hour Law

Farmers the State Over Are Awakening to the Fact That a Great Danger Confronts Them. Every Effort Should be Made Before November 3rd to Roll Up Overwhelming Vote Against This Initiative Measure

The Farmers' Union of Eastern Oregon, in resolutions unanimously passed regarding the proposed eight hour initiative bill, says:

"Initiative Measure No. 13 makes it unlawful for any employer to require or permit any employee, male or female, to labor more than eight hours during any day of 24 hours or more than 48 hours of any week of seven days, except that agricultural laborers may be permitted to work 10 hours a day where such work is necessarily incidental to farm management; provided, however, that in cases of extraordinary emergency endangering life or property, laborers may be permitted to work overtime, but shall receive therefor one and one-half times the rate of wage ordinarily allowed, for all time employed in excess of eight hours for each calendar day. This law applies to every person employed in the state. The penalty for violation is a fine of not less than $10 nor more than $100 for every day that such violation continues.

"In this state (Oregon), harvest wages are based upon long hours of labor and the wages paid are far above that which could be obtained by men of similar skill and ability in any other line of work.

"This is done because the harvest season is one of great risk to the farmer and unless the harvest is gathered at the proper time as quickly as possible, the farmer risks the loss of his crop, in whole or in part, through exposure to the destructive action of the elements.

"A single storm may wipe out his income for the entire year and involve his labor for two years. On account of the short season, it would be an impossibility to conduct harvest operations with a crew laboring only eight hours per day, without sustaining a great loss before the last of the crop is secured. It is a difficult matter to secure proper help at the best, and it would be an impossibility, owing to a lack of laborers, to work two shifts of men eight hours each, even if the farmers were able to pay the additional expense.

"If this measure becomes a law, it will add to the cost of farming to an extent that may wipe out the slender margin of profit which now exists between the cost of production and the selling price of the farmer's crop and so put the farmer out of business."

The Farmers' Union of Oregon seems to be awake to the danger which confronts the farming industry. Many Californians are awakening, and we believe this California eight hour measure will go down to defeat under an overwhelming adverse vote. However, the few months intervening between this and election time calls for a general campaign of education for, as was shown in last week's Cultivator, there are some even amongst the farmers who are so kindly disposed toward labor that they have not stopped to consider the real effect of this bill upon labor and upon the employer of labor. We believe the prevailing opinion is that labor must be fairly dealt with, but to encourage such a drastic measure as this will only cause contention between employer and employed.

"Permit."

We call attention especially to one word in this proposed law. "Any employer who shall require or permit, or who shall suffer or permit." In other words, a vicious employe who sees fit to injure his employer, and it seems there are such, if not prevented, may work overtime, which may lead to the arrest and fining of his employer, while under the terms of this bill no punishment whatever can be meted out to the one employed. He may work as many hours as he pleases and for as many people as he pleases during the 24 hours. We have asked a number of farmers for opinions on the effect of this measure, and some of these have been given in former Cultivators. A few more follow:

W. S. Guilford, Glenn County.

I believe that the passage and enforcement of the proposed eight hour law would work such a hardship on farmers who must employ labor that they will be forced to leave the state, or to enter other lines of business.

J. P. Dargitz, Sacramento County.

As to the eight hour law: As far as it bears on the general farming and fruit-growing operations it is an unthinkable thing. No one who has ever tried farming and fruit growing could think otherwise. When harvest time comes there is no eight hour system

(Continued on Page 43.)

Electric Driven Centrifugal Pumps

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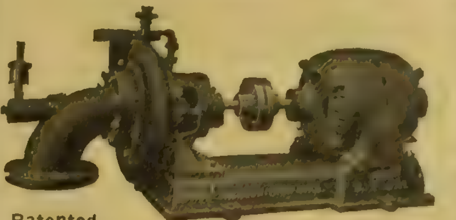

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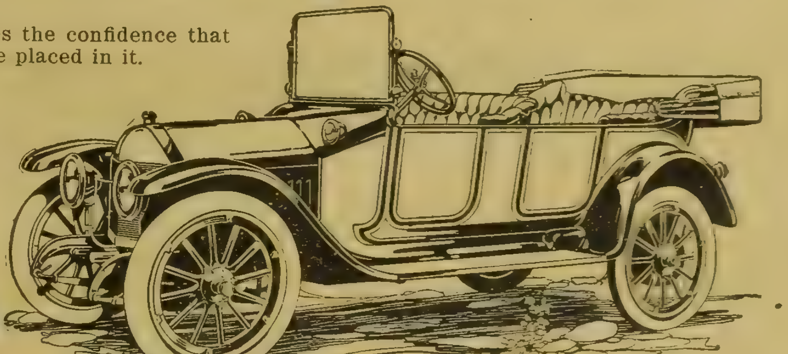

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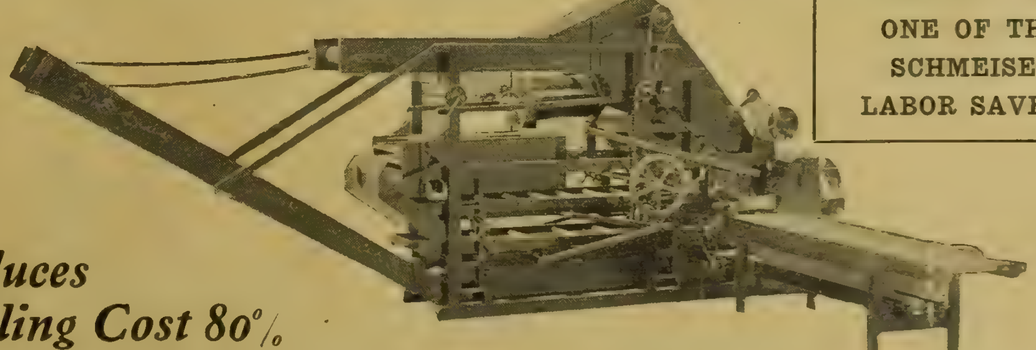

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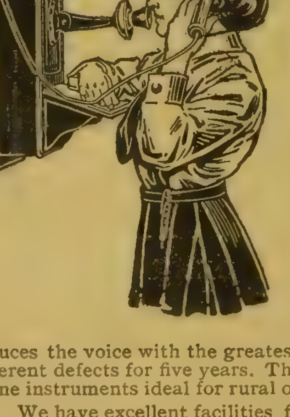

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General Agriculture

CLIMATIC CONDITIONS AFFECTING DRY FARMING IN THE SOUTHWEST.

By R. H. Forbes, Director Arizona Agricultural Experiment Station, Before Dry Farming Congress at Tulsa, Oklahoma.

The distinctively semiarid, subtropical, southwestern field may be defined as the region which combines less than 20 inches annually of rainfall, more than 70 per cent of possible sunshine, sharp frosts (down to zero Fahrenheit) in winter, long periods of hot weather (average maximum of 90 degrees in July) in summer, and very low atmospheric humidity. This region of combined extreme conditions includes Southern Arizona, most of Southern California, and adjacent parts of Mexico.

The severity of the extremes encountered in portions of Arizona which are now being attempted by dry farming methods, may be indicated by rainfalls of 11 to 24 inches; relative humidities occasionally varying down to 10 per cent; average maximum temperatures during summer months of about 100 degrees; untimely killing frosts; and at higher altitudes severe and long continued winds. These conditions whose combined effects may be measured roughly by an annual evaporation from a free water surface of 50 to 90 inches, are designed to test to the utmost dry farming practice, as it has been elaborated in districts farther to the north and east.

Difficult as the problem is seen to be, encouragement is offered by the occasional successes of experimenting farmers, especially during years of timely rainfall; by the excellent results of the native Papago Indians with their acclimated crop plants; and by the marked successes of the French in North Africa in a region fully as difficult of conquest as our own Southwest.

The beginnings of our study of extreme arid agriculture have been made in Arizona at altitudes between 4000 and 5000 feet, with rainfalls of nine to 11 inches, the preliminary work having been conducted on the usual theories of moisture conservation by soil mulches; one and two-year rainfall accumulations; planting in proportion to available water, etc. As a result of the work done by Professor Clothier, more particularly in South Spring Valley, the cultural practices of other districts seem subject to modification, and a new list of crop plants peculiarly suited to the region has begun to appear.

With reference to the controlling factors of rainfall and evaporation, and the water residue which can be maintained between them, the rainfall of the region occurs mainly in two seasons,—the winter season of November to March, inclusive, and the summer season of July to October. The winter rains are usually quiet and slow and sink mainly into the soil; while the summer rains are torrential and lost by run-off after storms. The two rainy seasons, about equal in amount, are separated by the very dry months of April, May and June, the two latter of which also include many of the hottest days of the year. This hot, dry foresummer has proved to be a serious climatic problem in Southwestern dry farming, especially where at higher altitudes there is much wind.

During the winter season, with its slow rainfall, moderate temperatures, and slight wind movement, conditions are apparently favorable for water storage in the soil and conservation by cultivation in the usual manner. During the summer rainy season also, when occur the heaviest storms, the data obtained at McNeil in Sulphur Spring Valley, show considerable accumulations of water in the upper four feet of soil. The attempt to carry this stored supply over for use the following year, however, has always failed in all types of soils despite the maintenance of deep soil mulches; and crops on fallowed grounds have been no better than those grown with no attempt at water storage.

Field observations have shown that about April first, with the advent of the dry, hot foresummer, a crust, caused by the subsurface evaporation, begins to form, increasing in thickness until the advent of another rainy season. Under our conditions a three-inch mulch is ineffective; and a mulch as deep as it is practical to maintain with ordinary tools seems inadequate to prevent loss of soil moisture from one year until the next. Only in light soils, easily penetrated by the rainfall and underlaid by heavier soil at four feet depth or more does there seem to have been some accumulation of water.

This effect seems due not only to the extreme aridity of the region, but to the high daily variations in temperature of surface soils, often ranging from 60 to 125 degrees in the course of a single day. Moisture laden air may then be expanded out of the soil in the day time and replaced by the dry cool air at night, which in turn may carry away additional moisture. For such reasons, associated with the extreme climatic character of the region, dry farm soils at McNeil have afforded a suitable seed bed in May and June when certain crops should be planted in order to mature before frost in the fall.

Under the stress of this condition we have had recourse to the use of the supplemental irrigation water applied through furrows for the purpose of bringing up crops of Indian corn, beans, milo and sorghum. By the use in this manner of three to four acre-inches of supplemental water, the seed has been brought up and the root systems developed so that when the summer rains came the crops were ready to make immediate and heavy use of them. Evaporation during the following season has then been checked temporarily by interculture of the rapidly growing crops, the object of the whole process being to make use of the water supply quickly before it shall have been lost by evaporation.

This procedure is the same in principle as that of the Moqui Indians, who, when threatened by late rains, plant each grain of corn in a handful of adobe mud and bury the wet mass under six or eight inches of sandy soil. The wet seed sprouts in the lump of mud, pushes to the surface, encounters the late rains with a flying start, comes to rapid maturity and is safely harvested before frost.

Supplemental irrigation water has proved indispensable not only to start but also to save and mature crops at times when the fickle and uncertain rainfall has proved inadequate. In brief, the experience thus far gained in Arizona indicates that with our dry foresummer, and our uncertain rainfall, our summer crops should have an insurance or supplemental supply of pumped or stored water to be used sparingly in emergencies to start or save a crop. Storage may be effected not in reservoirs necessarily, but for a period of weeks or months before planting time in the soil itself. A small stream of pumped water may be turned through successive furrows in a field, and the furrows then cultivated shut, the moisture thus trapped remaining available for use in gradually diminishing amount thereafter. The owner of a small pumping plant therefore may secure an extended use of his plant by thus storing water against planting time in the soil itself.

Using a few acre-inches of supplemental water in this way, experimental crops of beans, corn, milo and sorghum have been grown that promise economic success for the summer season. Winter crops have not thus far given satisfactory results, wheat and barley, for instance, approaching maturity during the severe months of May and June. Professor Clothier, speaking on the basis of experimental data, states that the two acres of milo irrigated with four inches of supplemental water pumped from a depth of 180 feet, produced a crop at no greater cost and equal in value to six tons of alfalfa grown on one acre with four feet of water pumped from a depth of 30 feet. This statement, if it holds good in practice, means the development of considerable areas of southwestern territory wherever ground water is available within economic pumping distance of the surface.

Equally important with cultural methods is the choice of crop plants especially adapted to the region. Species and varieties of crop plants native to subtropical desert regions are usually well adapted to the Southwest. Among these are native varieties of Indian corn, beans and squashes; and olives, pomegranates, tamarisks, forages and grains of the sorghum class, millets, and other drouth-resistant plants from the Old World. Of especial interest among these are the quick-growing varieties of teparies or Indian beans native to the mountains of Sonora and Southern Arizona and grown by the Papagoes from ancient times. These interesting beans germinate quickly, grow rapidly if supplied with moisture or drop their leaves and become quiescent if rain falls; set seed in the hot dry foresummer season when ordinary beans do not fertilize, and finally mature a crop on less water and in less time than is required by introduced beans, even those like the common frijole, that have been grown in the region for many years. Among introductions from the Old World, olives, pomegranates and tamarisks are the most hardy, especially tamarisks which withstand our extreme conditions of drouth, heat and cold, and endure also high percentages of alkali.

Probably of greatest importance among crops thus far introduced are the sorghums, among them kafir and several varieties of milo. These crops come from desert North Africa, and fit easily into the summer crop season of the Southwest. Sorghum proper affords abundant forage; and milo and kafir, possibly also shallu, afford good crops of grain which in feeding practice are an excellent substitute for Indian corn.

Replying to the inevitable question, spineless cacti, so far as we now know them, are not of economic value in Arizona. They do not withstand the heat of lower altitudes without shelter and irrigation, and they do not endure the frosts at higher altitudes. To make satisfactory growth at intermediate altitudes they must be irrigated, and the land and water required to grow them can be used for other more profitable crops.

The utilization of southwestern crops grown at great distances from large markets is equally important with culture methods and crop plants. Necessarily the main outlet for dry-farmed forages and grains is through animals and their products. Beef, dairy products, wool and mutton, pork and poultry are all the logical result of dry-farming operations supplemented by insurance irrigation on one hand and by the remaining grazing ranges on the other. The silo will undoubtedly be found essential for providing succulent feed here as elsewhere when green forage is not available. This will be found especially necessary for dairying which is one of the most likely developments of the region.

In review: The outlines of the semi-arid, southwestern agriculture as they begin to appear at this time are: Conservation for the earliest possible use for crops of rainfall by dry-farming methods of culture; the use of supplemental stored or pumped irrigation water; the hardiest and most drouth-resistant crop plants; silos to conserve forage supplies; livestock to convert crops grown into marketable produce.

The farmer himself, however, is more important than any of these, for the system is complex, requiring good knowledge of the methods of planting, knowledge of the properties of soil, intelligent choice and use of tools, skill with machinery, and expertness in the management of animals. Such combinations are not usual, and the development of every educational facility is called for to prepare and fortify men for the reclamation of the region.

In time, and after much hardship and many failures, I believe that considerable areas of southwestern semiarid lands will be intelligently and successfully cultivated.

SERVED BY THE GAS ENGINE.

The prevention of waste of effort, like other items of economic waste, is one of the chief arguments in favor of the gasoline engine on the farm. The days of unremitting drudgery have been abolished wherever the spirit of modern progress has made itself manifest. The ingenuity of the human mind has found as many ways for the profitable use of the gas engine as in any other branch of American industry.

The gas engine on the farm has an apparent versatile form of gender. It is by turns called the "hired girl" and the "hired man," the "chore boy," the "mail carrier," the "washer lady," the "butter maker," and a score of other titles. For the gasoline engine is ubiquitous in its abilities. Mounted upon a wheeled truck or portable base it works indoors and out, above ground and below.

It saves the farmer's wife, his daughter, his son and himself much hard labor, and a close inspection of its record and usefulness will probably also determine that not once, but upon several occasions, it has saved the farm itself.

It took a Kipling to sing "a song o' steam," but the explosive or muffled bark of the gas engine on thousands of American farmsteads is its own press agent and is faithfully chorused by jubilant owners and an admiring farm press.

Possibly it is in the guise of "chore boy" that the gas engine, or gasoline, kerosene or distillate engine is most valuable to the farm because in this guise it is an all-purpose help. It operates the pump that fills the stock tanks, turns the separator, washing machine, wringer, dynamo for the home electric light plant, the feed grinder, ensilage cutter, cider press, the wood saw and the binder in harvest time.

The light weight all-purpose engine of this class can be directly connected with the harvesting machinery and thus do all the work except pull the machine.

With the horses to pull the binder, the engine can be worked in soft ground, thus saving an extra team in harvest time on each binder and likewise saving the strength of the team. This light weight engine is automatic and governed by the throttle.

Weight, formerly deemed necessary in stationary engines, is no longer desirable. The improvements made in marine type, automobile and aeroplane engines proved that extreme power with lightness of weight were as successful as they were necessary to the purpose desired.

The light weight farm engine has proved serviceable in scores of tasks and neither size nor weight are longer necessary to prove durability.

The throttle-controlled, float-feed carbureter type of light engine gives both regulation and economy of operation, and these are essential traits to the all-purpose engine on the farm. Every farmer realizes the need of this character of engine on his farm and the one to four or six horsepower plant will economically perform a host of chore tasks for him far more quickly and in a better way than by the muscle-straining manual effort.

With the engine mounted on various types of harvesting machines it is possible to work such machines with more efficiency and greater results. It may be attached to a corn binder, driving a short shaft which operates the mechanism of the binder independently of the horses that pull the machine and thus takes the extra drag and tractive force from the wheels.

Such engines will take the place of horse flesh in many ways. They may be attached to the mowing machine to drive the sickle bar at a greater speed to get better cutting results in heavy grasses in certain fields or districts where ground is rough or rolling.—St. Jo. Fruit Grower.

THE CROOKED AND STRAIGHT

In any decent code of business ethics there can be no place for sharp practices. Not many years ago considerable homage of a contemptible sort was paid to the man who could "get the best of the bargain" through some piece of cheap trickery. Even today, among the less respectable element of men in business, the merchant who takes mean advantage of his customer and creditor and "gets away with it," as the base phrase runs, is looked upon as a "smart man" and one deserving of all success.

The player incapable of playing square should be put out of the game or kicked out, according to his degree of resistance. This is as true of clean business as it is of clean sportsmanship.

Of course, it is easy to work up fine feelings of indignation at the things in business of which we disapprove. After all, there is not much to be done about it except do the best we know how and make the path as rough as possible for the crook, as long as he remains a crook.

It is a good thing to be honest. It is a big thing to be successful. It is a great thing to be both honest and successful—Implement Trade Journal.

ATTENDANCE AT LOS ANGELES COUNTY HORTICULTURAL PICNIC.

"Believe me, that was some picnic," is the description given by P. D. Barnhart. The picnic referred to was that held by the Los Angeles County Horticultural Society at the grounds of Howard and Smith, at Montebello, on June 28th. The day was partly given over to pleasure, in fact, but little business was transacted, but a good program, touching to a certain extent upon things of interest to nurserymen was rendered. Not the least pleasing portion of it was a number of vocal solos. Those who attended were met at the end of the street car lines by a fleet of motor trucks.

The guests of honor were members of the Pasadena Horticultural Society and many others, friends of the Los Angeles County Society. Over 300 sat at the banquet table at one time. Practically everything good to eat and drink was served.

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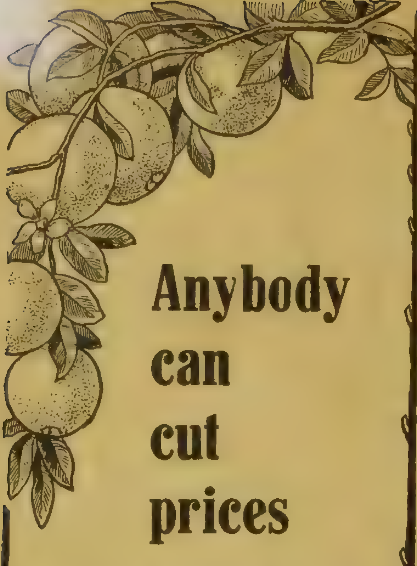

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Farm Economics

THE INITIATIVE IN CALIFORNIA

Written for the California Cultivator

By E. L. Payne.

The state constitution of the state of California provides that upon presentation to the secretary of state of a petition certified, as provided, to have been signed by qualified electors equal in number to eight per cent of all the votes cast for all candidates for governor at the next preceding general election at which a governor was elected, proposing a law set forth in full in said petition, the secretary of state shall submit the said proposed law to the electors at the next succeeding general election occuring subsequent to 90 days after the presentation aforesaid of said petition. All such initiative petitions shall have printed across the top thereof, in twelve point black face type, the following: "Initiative measure to be submitted directly to the electors".

Any law submitted to the people by initiative and approved by a majority of the votes cast thereon at any election shall take effect five days after the date of the official declaration of the vote by the secretary of state. No law initiated or adopted by the people shall be subject to the veto power of the governor, and no law adopted by the people under the initiative provision of the constitution shall be amended or repealed except by a vote of the electors, unless otherwise provided in said initiative measure.

Any initiative petition may be presented in sections, but each section shall contain a full and correct copy of the title and text of the proposed measure. Each signer shall add to his signature, his residence, giving the street and number, if such exist; his election precinct shall also appear on the paper after his name. The number of signatures attached to each section shall be at the pleasure of the person soliciting signatures to the same. Any qualified elector of the state shall be competent to solicit said signatures within the county or city and county of which he is an elector. Each section of the petition shall bear the name of the county or city and county in which it is circulated, and only qualified electors of such county or city and county shall be competent to sign such petitions. Each section shall have attached thereto the affidavit of the person soliciting signatures to the same, stating his own qualifications and that all of the signatures to the attached section were made in his presence, and that to the best of his knowledge and belief each signature to the section is the genuine signature of the person whose name it purports to be, and no other affidavit thereto shall be required.

Each section of the petition shall be filed with the clerk or registrar of voters of the county or city and county in which it was circulated, but all said sections circulated in any county or city and county shall be filed at the same time. Within 20 days after the filing of such petition in his office, the clerk or registrar of voters shall determine from the records of registration what number of qualified electors have signed the same; and upon completion of such examination shall forthwith attach to said petition, except the signature thereto appended, his certificate properly dated showing the result of said examination, and shall forthwith transmit said petition, together with his said certificate to the secretary of state, and also file a copy of said certificate in his office. Within 40 days from the transmission of the petition and the certificate by the clerk or registrar to the secretary of state, a supplemental petition identical with the original as to the body of the petition, but containing supplemental names, may be filed with the clerk or registrar of voters as aforesaid. The clerk or registrar shall within ten days after the filing of such supplemental petition, make like examination thereof, as of the original petition and upon completion of the examination, shall add his certificate properly dated, showing the result of the examination and forthwith transmit a copy of the supplemental petition, except the signatures, together with his certificate, to the secretary of state.

When the secretary of state shall have received from one or more county clerks or registrar of voters a petition certified as herein provided, to have been signed by the requisite number of qualified electors, he shall forthwith transmit to the county clerk or registrar of voters of every county or city and county in the state his certificate showing such fact.

A petition shall be deemed to be filed with the secretary of state upon the date of the receipt by him of a certificate or certificates showing said petition to be signed by the requisitte number of electors of the state.

All measures submitted to a vote of the electors under the above provisions shall be printed and together with arguments for and against each such measure by the proponents and opponents thereof, shall be mailed to each elector in the same manner as now provided by law as to amendments to the constitution proposed by the legislature, and the persons to prepare and present such arguments shall be selected by the presiding officer of the senate.

PURPOSE OF FARM COST ACCOUNTING

By J. S. Ball Department of Farm Economics, U. S. D. A.

Discussion of the value and use of complete cost records on the farm is becoming quite frequent in the rural press, and rather divergent views of this subject are being expressed. The real purpose of keeping cost records is to determine the cost, income and profit of each individual enterprise in which the farmer is engaged; to set forth the governing factors of these; to exhibit the efficiency in the management and use of man labor, horse labor and farm machinery; to show what the cost of living amounts to; and to fit these and all other branches of the farm industry into a complete, comprehensive whole that shall show every detail of the farm organization and operation.

Cost accounting methods that fulfill all requirements in commercial enterprises will not necessarily do for the farmer. While the farm is a business and factory combined, it has one element not found in any other line of business, for the farm is a home and the home finances are so involved in those of the farm that it is necessary to use care and thought to avoid confusing the farmer's personal business as a man with the farmer's business as a farmer. A man may make a profit in his farming operations and still be falling backward steadily by reason of his high personal and living expenses; or he may not even be making 2 per cent on his investment and yet be getting ahead. He may do this by keeping down these personal expenses, or a small per cent net return on a large capital may more than cover his living expenses. By means of complete farm cost records these conditions can be shown in their true light and the farmer enabled to discover the weak spots in his business organization.

Keeping account with only one or two enterprises may not show true conditions. In such accounts all possible income items are usually remembered, but many items of expense which complete accounts show actually exist are rarely added to the costs. As Prof. Warren of the New York State College of Agriculture has said: "It is easy to figure a profit on anything except on the farm as a whole," and an attempt to bring the profit figured on a few separate special enterprise accounts into harmony with the year's gain or loss on the whole farm will usually fail for lack of complete data.

In all cases, actual farm values should consistently be used and the actual facts ascertained. If the values or quantities are made too high

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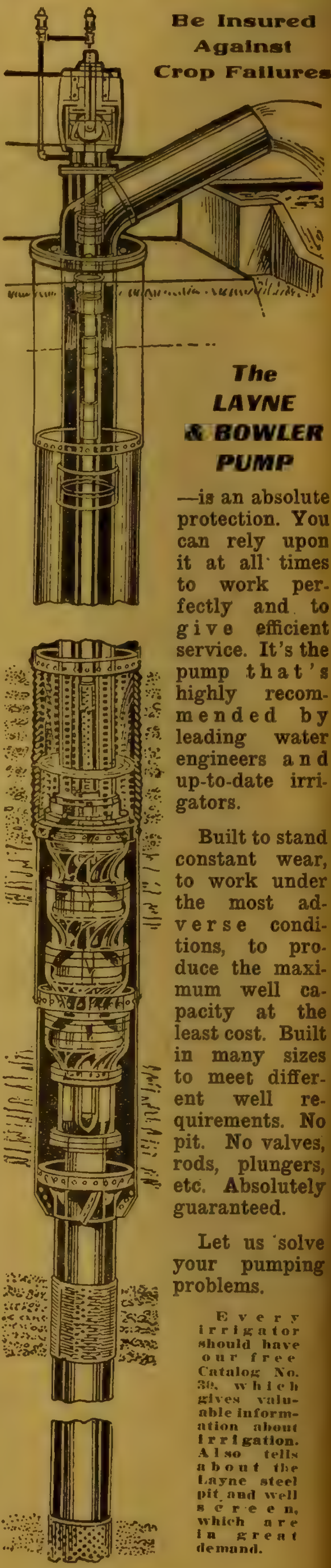

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in the second inventory in order to swell the year's "book" profits, the next year's "boo.. profits are affected inversely in like amounts. If the crop yields are overestimated or overvalued to make the crops show up well; if they are underestimated and undervalued when fed to show livestock profits; if manure is credited to the livestock and never charged to the crops; or if any such juggling of accounts is indulged in by any man he is only fooling himself, and he gets distorted and misleading results. Showing every enterprise as it is, with conservatism in placing values, is the only safe road to true results.

Another pitfall in farm cost accounting is the tendency, almost universal, to single out one farm enterprise—as, for instance, beef cattle—as the sole productive account of the farm and to charge all produce to this account at cost. Accounting of this kind is labor thrown away. The results will not give the farmer any information as to how to improve his methods so as to receive greater profits.

The keeping of farm cost accounts requires thought and painstaking attention in their recording, summarizing and interpretation, but are well worth it all to the farmer who wishes a true analysis of his business. What is the use of going to a lot of trouble to keep accounts that do not give any true insight into actual conditions? Beef is a finished product; so also are corn, oats, hay and many other things produced on the farm. The production of each of these is a separate, distinct farm enterprise, and the farmer needs to know the relative profit or loss from each separate from the others. Then farm cost accounting becomes a valuable means to an end—more profitable business management.

THE TYPEWRITER IN THE HOME.

Much has been written in regard to the typewriter in the home, its value and usefulness, and much more can be written as the months pass by, for each moon brings new evidence of the possibilities and advisability of the writing machine for the home, especially on the farm and more especially on the ranch in California. Up-to-date methods in farming and ranching in this state are employed. A successful rancher on a large scale or small scale is deriving not only a living, but enjoyment out of his work. He is not by any means a faddist, but a clever, thinking, clear-minded business man; whose value as an important addition to his neighborhood is evinced by the manner in which he conducts his ranch. Observers take notice that the successful rancher of today is in touch with the world, and is well posted on the leading questions of the day. With the R. F. D. at his command he can, without visiting the large cities, keep in touch with his fellow men. It is safe to say that no invention—not even the indispensible telephone—brings as much real enjoyment, satisfaction and profit as the typewriter, for with it, no matter what the conditions are, early or late, tired or rested, callers or no callers, manicured, or hands with the true rancher's grip, calloused or not, the rancher enjoys the use of the typewriter in his correspondence, and keeping records of crops, etc., for the typewriter will record his thoughts with accuracy and neatness, whereas the task with a pen would be laborious. In no other way can a man, semi-isolated or out in the desert communicate with his friends and keep his mind active and get real enjoyment from his work as with the typewriter. No business is conducted now without it. No business man cares to receive a letter written in long hand, no matter how well it may be written. The times demand it.

The cost of a good typewriter is very small, compared with the service it will give. Even the used machine is better than none. The cost of a new machine is not much greater than of a secondhand—they can be bought on favorable terms from the leading companies. Many farmers and especially small ranchers are beginning to realize the value of the typewriter for the use of the children. Every boy and girl should know how to use a typewriter. It teaches them to spell correctly, punctuate, collect their thoughts and to be neat in their work, and best of all, the knowledge of a typewriter may be a big help to them in their future vocation, and is often a stepping stone to a successful career.

The manager of one of the leading typewriter companies in Los Angeles advised the editor of this paper recently that his company could not obtain sufficient young men and women to fill the calls for positions in offices where the typewriter is used. The public schools recognize its usefulness as a study and the operation of same is part of the regular course. We predict within a few years the typewriter will be as well known and perhaps more widely used in the home than musical instruments, in fact, it should be part of the rancher's library and office.

FARM CREDIT AT WASHINGTON

Farm credit legislation seems to be headed toward a sharp contest between those for and opposed to government loans. The new Bulkley-Hollis bill introduced in the house is the result of the deliberations of the joint sub-committee of two branches of congress. It contains in part, the principle of government loans for the benefit of agriculture, which the large farm organizations have contended for. In this respect, together with the killing of the Moss-Fletcher bill, the new bill can be taken as a partial triumph for the farmers. These organizations were practically united in support of the bill introduced by Representative Bathrick of Ohio, who has led the fight for government aid during the last two years. His persistent propaganda for this principle is well known, and to his research, speeches and writings is mainly due the credit for the general understanding of that division of the farm credit question.

In an interview he presents his views as follows: "Everybody now knows that all the leading nations of Europe are doing more for the farmers than I have asked our government to do. Those who are posted, and are not more interested in high profits on interest than in the future of our food supply, have stopped calling government loans class legislation and socialism.

"My bll is still the best bill to relieve the burden of high cost of money to the farmer. But I have had some experience in getting the right kind of legislation. Very often the overzealous miss the psychological moment to get the best they can. It is for that reason I have announced my support of the Bulkley-Hollis bill. The bill contains three items of substantial government aid which will be of immense advantages to the west and south, particularly. It opens possibilities of good everywhere. It contains as little greed as could be expected with the many opinions of conflicting interests. It has a touch of mutuality and improving amendments can be made which should not seriously conflict with the opinions of the makers of the bill. Expenses of operation are low, the bonds to be issued against mortgages are well fortified and should sell at a rate which should reduce the interest burden to the borrowers."

FACTORS OF PROFITABLENESS IN FARMING

Low real estate prices.

Farm products of classes deficient in supply.

Magnitude of the farm business, measured either by land farmed or amount of labor required.

High quality in products.

Reputation of the producer: Applies especially to the production of pure-bred breeding stock.

Advantageous marketing.

Productiveness of animals kept.

Largest yield with relatively little labor and fertilizer.

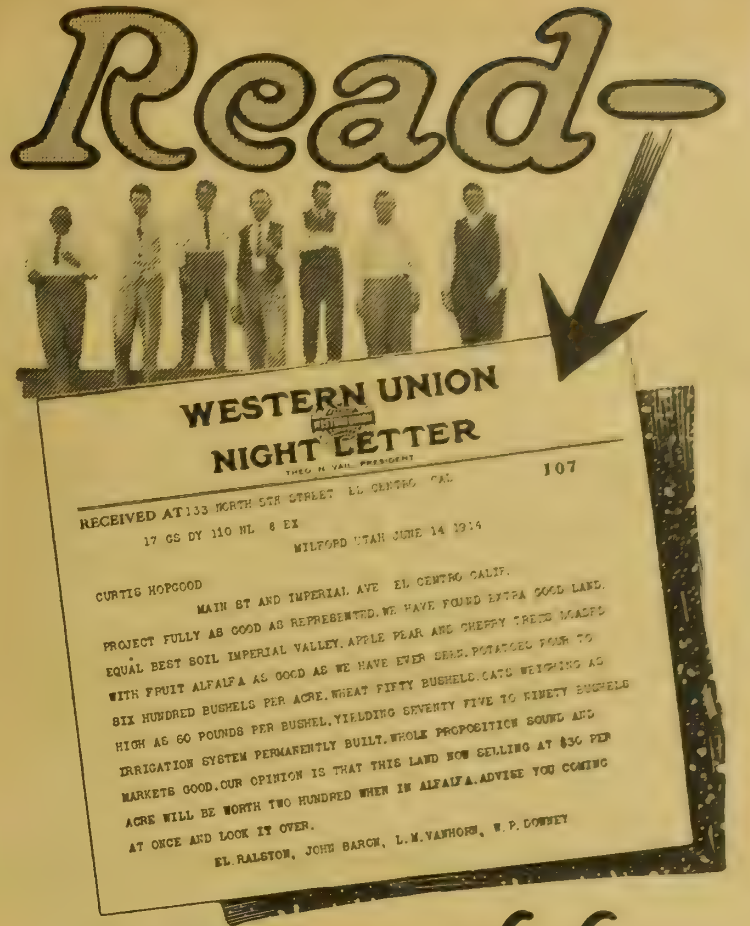
Low cost of production. (Involves good farm organization.)

Stability of profit depends on the staple character of the products.

A PLACE FOR SMALL TOOLS

If you have a shabby suit case that you have discarded for a better one, it may "make good" again as a toolbox—to hold all small tools about the house. It keeps all of them dry—in one snug place, and it is handy to find a tool when in a hurry.

Opportunity knocks now and then for the most people, but it seldom bursts down the door.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SIX HUNDRED BUSHELS PER ACRE. WHEAT FIFTY BUSHELS. OATS WEIGHING AS
HIGH AS 60 POUNDS PER BUSHEL. YIELDING SEVENTY FIVE TO NINETY BUSHELS
IRRIGATION SYSTEM PERMANENTLY BUILT. WHOLE PROPOSITION SOUND AND
MARKETS GOOD. OUR OPINION IS THAT THIS LAND NOW SELLING AT $30 PER
ACRE WILL BE WORTH TWO HUNDRED WHEN IN ALFALFA. ADVISE YOU COMING
AT ONCE AND LOOK IT OVER.
EL. RALSTON, JOHN BARON, L.M.VANHORN, W.P.DOWNEY

-what successful Imperial Valley ranchers say about

Milford Valley Lands at $30 per acre

A FEW days ago a group of Imperial Valley ranchers pictured above visited the lands of the newly opened Milford Valley irrigation project. They are men who took advantage of the opportunities that existed in Imperial Valley several years ago. **They made money.** A few weeks ago they heard about Milford Valley of Southern Utah. They went up and made a thorough investigation, as only **practical men** can do. The Western Union Night Letter reproduced above was sent by them to Curtis Hopgood, an Imperial Valley rancher, who was unable to make a trip to the valley, but requested them to wire him immediately if conditions were absolutely as represented.

On Main Line of Salt Lake Railroad—adjoining Live Town of Milford.

These men bought generously of the rich, red, loamy lands of beautiful Milford Valley. They knew that this $30 land (with a perpetual water right at $70 per share, payable in 12 years, if desired) would be easily worth $250 or more an acre when in alfalfa. They appreciated the value of a water maintenance cost that should not exceed 30 cents per acre per annum. They reveled in the glorious mountain air of the valley—elevation 4971 feet. They enthused over the **pure, soft,** sparkling drinking water. They realized that this was a **successful man's land.** They knew that land sold on a cash basis would eliminate the homesteader class of settlers. They bought within sight of Milford, a progressive city—an important railroad center. They were alive to the crop possibilities—in alfalfa, potatoes, grain, dairying, hog raising and deciduous fruit culture. They saw another **Imperial Valley opportunity** in Southern Utah. That they bought land right on the spot is a wonderful tribute, a splendid testimonial to Milford. Imperial Valley men surely **know good land!**

This land opportunity is going fast. If you buy now you gain an overwhelming advantage over the late comers—by buying suburban to the city of Milford. Write today for illustrated booklet which tells about the best valley in the west—about land that is being sold at only a fraction of its real value. Write today!

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Established 1889. Twenty-fifth Year.

The California Cultivator

Rural Californian combined with the California Cultivator

A Journal of Horticulture and Agriculture

By
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CHINESE EGGS.

It is claimed that Chinese eggs are laid down in San Francisco at less than ten cents per dozen, and that the production cost in China is less than six cents. If the importation of these eggs is continued it is hard to see where the Pacific Coast egg producer will land; either he will have to go out of the business or live like a Chinaman.

DRY FARMING.

The coming Dry Farming Congress will be held in Wichita, Kansas, October 7-17. In connection with it will be held the International Soil Products Exposition. The list of premiums for dry farmed products aggregates $3500. In addition to these cash prizes there will be many offered by various implement and tractor manufacturers which will vastly increase the premiums.

Consolidation

California Cultivator Absorbs the Rural Californian and Now Leads All Weekly Coast Farm Papers in Circulation

In 1877 the old-time Southern California Horticultural Society, realizing the need of an organ, fathered and mothered for nearly three years the Southern California Horticulturist. On January 1, 1880, it passed into private ownership, and Messrs. Carter and Rice began the publication of Semi-Tropic California and Southern California Horticulturist. In November of 1882 Mr. Rice, with Mr. Martin as business manager, launched the Rural Californian, and the next issue announced the purchase of the Semi-Tropic California.

From that time until the present the Rural Californian has been published as a monthly, and it is one of the oldest magazines dealing with rural life on the Pacific Coast. A few years ago it was purchased by the Cultivator Publishing Co., and has since been issued by practically the same force as engage in the production of the California Cultivator. The business manager has decided that greater usefulness may be secured by merging these two papers and giving to advertisers the benefit of the greater combined circulation, which now aggregates nearly 25,000 papers every week, and to subscribers the benefit of the centering of our energies in the one paper.

The June issue of the Rural Californian is the last one of that magazine to appear. Rural Californian subscribers will have their subscriptions continued for the unexpired term. Those who were subscribers to both papers will have their time extended.

All the features which have been helpful in the California Cultivator will, of course, be continued. In addition, some which have proven so popular with subscribers of the Rural Californian will be taken up, and, as soon as arrangements can be completed, the household and other departments will carry on some of these favorite features; for instance, in the household department, announcement will later be made of contests for recipes, menus, etc., and we hope to give in one issue of each month a page to prize photographs of home life on the Pacific Coast. More definite announcement will be made in later issues.

REGISTER

It seems that every voter in California should be registered before this, but we learn that there are thousands yet to register. There are questions at issue at this coming election in which every producer should have vital interest. In order to vote at the primaries or have the name of any value on a petition at this time, one should register. The primaries are in August, and there are yet a few weeks in which to register, but soon these few weeks will pass, and the primaries, which are more important than the final election, may be deprived of the support of some of our best people.

DOLLAR WHEAT

The Society of Equity, with headquarters at Indianapolis, is making a strenuous effort to encourage farmers to hold for dollar wheat. The visible supply is lower than for several years, and while the coming crop will be large, the shortage of holdover, combined with the shortage in all European markets, should encourage the farmer to be at least a bit independent. The definite suggestion is made that farmers market slowly at the start, selling only as compelled unless an entirely satisfactory price is offered. The society is not urging farmers to become members or to combine in demanding a specified price, but it does urge them to hold and not be stampeded into selling at disastrously low prices.

STANDARDIZE.

We call attention to the action of the grape growers of the San Joaquin Valley. Their industry has been seriously injured by unscrupulous shippers who have considered only their own selfish interests and have marketed fruit unfit for human food. They have received long prices for their "early grapes," but their low quality has caused the trade to rebel at the imposition, and then the shipper who had been honest and held back his grape crop until it was fully ripened has put his product on the market just in time to receive the punishment which should have gone to the "early" shipper. This the scrupulous shipper is getting tired of and he is demanding in no uncertain tone that the practice shall cease. Many of the shippers are signing the standardization agreement of the newly formed California Green Fruit Association, and it is to be hoped that all will do so before the grape shipping season is on. The organization so far does not cover the Tokay section of the north. It is to be hoped that the Tokay people will perfect a similar one or affiliate with the San Joaquin Valley association.

SOME COTTON.

The July report of the crop reporting board of the United States department of agriculture summarizes the condition of the cotton crop as follows: "The area of cotton in cultivation this year (1914) in the United States is about 39,960,000 acres, as compared with 37,458,000 acres, the revised estimate of acreage in cultivation a year ago, being a decrease of 498,000 acres, or 1.3 per cent."

The condition the country over was 79.6 per cent of normal. This was better than last year the same date by five per cent, but slightly under the ten-year average.

The best feature of the report from the California standpoint is that where many other states are showing an area under that of last year, California shows a planting of 35,000 acres as against 14,000 last year, or 250 per cent of last year's acreage. The greatest increase in any other state is in Missouri, the acreage there being 110 per cent as compared with the preceding year. Oklahoma shows the greatest decrease. Her area is 92 per cent of last year's, while Texas, the greatest cotton growing state of all, shows 95 per cent of last year's planting. Her acreage this year aggregates 12,052,000. Georgia comes in second with 5,000,000 acres; Alabama and Mississippi next with about 4,000,000 and 3,000,000 respectively.

The total acreage of cotton in the United States is 36,960,000. Condition at the end of June the country over was 79.6, while that of California alone was fully 100 per cent. California's little 35,000 acres does not loom up very big compared with Texas' 12,000,000, but quality and condition of crop and all considered, we are some producers of cotton.

Agricultural News Notes

Italian tomato paste and extract have of recent years become well established in the world market.

The demand for grapefruit is steadily growing in England, but it has not yet come into general consumption, being handled only by the highest class of fruit dealers.

Citrus culture has developed remarkably in the past few years on the Isle of Pines, south of Cuba. Americans now own practically all the agricultural lands of the island.

Early this year an entire shipload of sugar-beet pulp was shipped from Almeria to Boston and New Orleans to be used for feeding cattle. The cargo consisted of 1089 tons and was packed in sacks containing each 88 pounds.

By a recent decision of the department of agriculture all fruit juices to which alcohol has been added must be plainly labeled to show this, if they are to be shipped in interstate commerce after Sept. 1, 1914. In the past alcohol has been frequently added as a preservative to preparations which are used for such purposes as flavoring beverages or preparing cordials.

Two crops of oranges a year mature in central India. The trees flower from February to March and the fruit is ripe from November to December or January. The second flowering is from June to July, and the fruit ripens from March to April. The oranges of the second crop are the sweetest and, coming at the beginning of the hot season, are highly valued.

Two new cooperative creameries will soon commence operating in Saskatchewan, Canada. These will be under direct control of the Saskatchewan department of agriculture, just as are all similar establishments in this province. As the government pays express charges upon all cream supplied to a cooperative creamery, no matter how long the haul, distance from market does not affect the farmer.

In its control of hog cholera, Canada has for years adopted a quarantine of infected farms and districts, and infected and contact hogs are slaughtered, thorough disinfection under government inspection is required, and no hogs are allowed on the premises for three months. Owners are paid compensation to the extent of two-thirds of the appraised value, which shall not exceed $15 for grade hogs or $50 for pure-breds.

One of the most remarkable instances of nature providing for the wants of man is in the vegetable sponges of Ecuador. The vine on which the sponge grows is found on the flat wet lands of this republic, appearing only during the rainy seasons. It is an annual and grows rapidly, after the fashion of a pumpkin vine, with long smooth fruit resembling a summer squash. Upon ripening the fruit is gathered and dried, when the interior is seen to be composed of a tangled network of fine fibers, with black seeds similar to those of the watermelon. The dried skin is easily removed, when the fibrous network or sponge is ready for use, after one side has been cut open. Washing in a few waters removes all extraneous materials, and the sponge may be used as any other. The poor people utilize them for washing dishes and when bathing, claiming they are superior to the animal sponge.

Agricultural News Notes of the Pacific Coast

Northern California

A "dry" federation is being organized in Napa County.

Buyers in Alameda County are offering $35 a ton for apricots.

It has been decided to hold the Sebastopol Gravenstein Apple Show August 3-8.

A big combined harvester in Yolo County has been posing before the movie camera.

So far this season apricot shipments have been almost three times as great as last year.

A big hog ranch is to be established near Winters. A tract of 1400 acres will be devoted exclusively to raising hogs.

Almond growers of Durham, Butte County, have decided to incorporate a growers' association and erect a warehouse.

Supervisors of Placer and Nevada Counties have been conferring on a proposition to build a road around Lake Tahoe.

Horticultural Commissioner Lamiman of Shasta County estimates the prune crop this season at about 40 per cent of average.

Alfalfa growers of Oroville expect to cut between eight and ten tons to the acre this season. They are now cutting their second crop.

Oakdale, Stanislaus County, is shipping prunes and onions in carload lots. They are being handled by the California Fruit Growers' Association.

At the call of the Yolo County board of trade a meeting was held in Woodland June 30th to form an organization to fight the eight-hour bill.

The Sonoma County Poultrymen's Federation is discussing the question of calling a state convention to agitate legislation against the Chinese egg.

The rate-making departments of the steamship companies are making up schedules of prices for carrying California fruits through the Panama Canal.

An experimental planting of tobacco at Oroville has proven very satisfactory and it is stated that 150 acres additional will be planted next spring.

One of the newest initiatives calls for a bond issue of $1,800,000 for permanent buildings for the University of California. The petition was started by the alumni association of he university.

Last June the payment to dairymen of Oakdale, Stanislaus County, for cream checks was $900. This year t is $10,000. New herds of dairy ows are being brought into the dis-rict almost daily.

Vineyardists of San Joaquin County ave taken advantage of the warm weather to sulphur their vines. The nusually heavy foliage on the vines as kept them moist and damp and made several sulphurings necessary.

The Sacramento Valley Development Association has appointed a ommittee of 15 to present to the people of the Sacramento Valley campaign plans adopted by the association. The purpose of the campaign is induce exposition visitors during 915 to actually visit the Sacramento alley and learn of its possibilities st hand.

Central California

Dinuba is now shipping out melons by the carload.

Modesto's free market is open on Tuesdays and Thursdays.

Selma, Fresno County, has inaugurated a free city market.

The latest estimate of the raisin tonnage for 1914 is 100,000 tons.

Two warehouses in Corcoran, Kings County, are receiving 6000 sacks of grain a day.

Dinuba's first carload of watermelons for this season was sent to Seattle, June 26th.

It is now thought that the Porterville cannery will make a run on tomatoes this fall.

Alpaugh beet growers have signed contracts for a term of five years on an acreage of 2500.

The Tulare County Growers' Association has signed a contract for 10 cars of Tuscan cling peaches.

Officers of Porterville, Tulare County, canneries are asking for a new train over the Southern Pacific.

The bulk of the apricot crop in the Kerman district will be sold to the California Cured Fruit Exchange.

The State Viticultural Commission held a meeting for growers of the third district in San Francisco June 30th.

Kerman, Fresno County, reports practically all apricots cut by the last of June. Many sales have been made at nine cents.

At the recent meeting of the San Jose Grange, Patrons of Husbandry, the matter of securing a county advisor was discussed.

The manager of the Tulare cannery expects to start work on peaches by the middle of the month. The first to be handled will be Tuscans.

A big cattle feeding project is to be established in the Poplar district of Tulare County, July 15th. It will start off with 1000 head of steers.

An emergency potato convention will be held in Stockton August 11 and 12 for the purpose of improving shipments of California potatoes and guarding against quarantine by other states.

The Western Meat Company of San Francisco has entered the cattle business in Tulare County. The company will bring cattle from San Francisco to fatten on the big hay crop of the Tulare section.

The California Holstein Friesian Association met in Corcoran, Kings County, June 17th and listened to a number of addresses. It was decided to hold the next meeting in San Francisco in June, 1915.

There is a movement now on to form a Merced irrigation district which will include over 200,000 acres. It is proposed to leave out the Atwater district, where there has been considerable opposition shown.

A break in the Davis reservoir of the Turlock irrigation district caused extensive damage last week. It is feared that two crops of alfalfa will be lost because it will be impossible to repair the dam for this summer's irrigation.

Southern California

San Diego County claims the garlic king of the world.

Hog breeders near Calexico are organizing to fight hog cholera.

Southern California's lima bean acreage is estimated at 125,000.

Ventura County reports no trouble in securing plenty of apricot pitters.

Southern California estimates its output of potatoes at 18,000,000 sacks.

San Diego County citrus and olive growing sections report black scale worse than for years.

There have been some slumps in the melon trade, but as a rule growers are pleased at returns.

The Limoneira ranch at Santa Paula, Ventura County, shipped 21 cars of lemons in one week.

The Walnut Men's Protective League is being organized to watch the larger interests of the walnut industry.

Santa Ana County's forestry nursery is well started. Many of the trees will be ready for planting out next spring.

The Orange County sealer of weights and measures has brought to book Japanese berry growers who were marketing light packages.

Imperial Valley is hoping to press to completion the organization of the irrigation district to secure control of the Colorado river and its irrigation supplies.

The Walnut Protective League has declared against the eight-hour law, the minimum wage scale and the threatened advance in freight rates on walnuts.

Machinery and equipment for the packing house of the Hemet Cured Fruit Association is being installed. It is to be ready by July 10th for work on apricots.

A number of apricot growers outside of the regular association in Orange County are reported as trying to get together to form a marketing association.

Manager Griswold of the Covina Fruit Exchange has just returned from a visit to citrus markets in Eastern United States and Canada. He reports prospects for Valencias very bright.

The total acreage of sugar beets planted this year is estimated by the Southern Pacific and by the California Beet Growers' Association at 65,400 acres, slightly less than previous years' acreages.

San Bernardino invites the world to celebrate the completion of the Pacific Electric line from Los Angeles to that city on Saturday, July 11th. The entire town will keep open house for the visitors and a great good time is promised.

An initiative petition is being circulated by the "People's Fish and Game Commission" calling for many changes in the game laws, two of which are: "No license fee shall be charged citizens of the state to fish with rod and line, when not for profit"; "citizens of the state may hunt in counties in which they reside, when not for profit, without payment of license fees."

The Coast

Kiesling, Washington, expects to more than double its last year's output of apples.

Eight hundred thousand sheep are owned by the Navajo Indians of Northern Arizona.

The New Mexico college of agriculture at Mesilla Park held a silo demonstration on June 23rd.

The crop of watermelons in the country about Phoenix, Arizona, is this year estimated at 250 cars.

Members of the Farmers' Union of Maricopa County, Arizona, have incorporated a marketing company.

Over 1000 Mexican cattle have been purchased by the government for Indians on the San Carlos reservation in Arizona.

Only 25 cars of prunes will be shipped this year from Clark County, Washington, according to a recent estimate.

The mid-summer fair of Maricopa County, Arizona, will be held at Phoenix, July 10, 11. Many cash prizes will be awarded.

The Central Idaho-Washington Fruit Growers' Association held its annual meeting the latter part of June, reelecting all officers.

Bankers of Douglas, Arizona, estimate the amount of money realized from cattle sold there within the past few days at over $150,000.

The University of Arizona has organized an agricultural extension service. The work will be carried on by traveling field agents and lecturers.

Farmers of Umatilla County, Washington, have contracted wheat for July delivery at 71 cents. The crop is estimated at 90 per cent of normal.

A large number of cattle have been shipped to Wyoming from Arizona ranges this season. Mild winters and cheap hay are said to make steer feeding profitable.

Salt River Valley of Arizona reports a slight shortage of water. Farmers are hoping for flood waters from the summer rains and early fall rains in the valley.

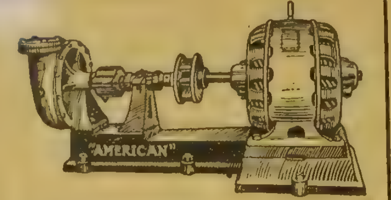
Timber land owned by the University of Arizona within the Coconino and Tusayan national forests is now being logged conservatively under regular forest service rules.

The first apples for 1914 were shipped from Kennewick, Washington, a week ago. Packed in small peach boxes, the apples realized 75 cents to $1 per box, which is a record price.

Farmers of the Waterville district in Washington are cooperating with County Agriculturist Richardson in hog feeding experiments to test the relative values of alfalfa and sweet clover.

About 2000 head of cattle, mostly from California, will be pastured on the river bottoms below Parker, Arizona, this summer. The prospects for pasture in the river bottoms are better than for several years.

Luna, Grant and Dona Ana counties of New Mexico have shipped out 19,600 head of cattle the present season. The average price is said to have been $30. The range in this section is said to be in excellent condition.



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FEEDING COTTONSEED MEAL TO HOGS

By Dr. Andrew M. Soule, President Georgia A. & M. College.

This is a subject of general interest to southern farmers, for cottonseed meal is an indirect by-product on practically every farm. That this question constitutes an issue of more than passing importance is shown by the large number of inquiries received concerning the utilization of meal as an amendment in rations for hogs. A long series of experiments have been made to determine what could be done along this line and recommended with safety to the farmer. In most instances an adverse result has been obtained. It has seemed that cottonseed meal could only be fed for a limited period to hogs without producing fatal results. Much variation in this respect has been shown in all experiments made, due no doubt to some inherent characteristics of the animals under test. Apparently a small percentage of the hogs fed on this concentrate are immune to any toxic effect it may be thought to exert when fed to this class of stock.

Naturally the meal could not be fed under the conditions portrayed above with either satisfaction or success. Work was therefore begun some years ago in Texas to determine in what proportion it could be used advantageously, especially in combination with corn. It was soon discovered that if the meal and corn were fermented together in the proper proportion of five parts of corn to one of meal, that hogs could be fed this mixture for from 50 to 90 days with excellent results and a large measure of safety. In fact, there seemed to be little danger from using this combination for 60 days and where the animals were allowed to range on fresh pastures, for as long as 90 days. The quantity of meal which could be used under these conditions was, however, limited though its effects were shown in the larger and more uniform gains made, the finer quality of the pork as to the admixture of fat and lean and the large percentage of good meat in proportion to the offal. It was necessary to ferment the feed for at least 24 to 36 hours in summer and from 48 to 72 hours in winter. This, of course, involved considerable trouble to the farmer, but was a wise policy nevertheless, for the results obtained seemed to fully justify the use of the small amount of meal indicated as an amendment to a ration of corn for hogs. These particular tests were conducted in Texas. Since that date some important work has been undertaken in North Carolina with results that promise to be of the greatest importance to the hog raising industry of the south.

To Prof. W. A. Withers much credit is due for the persistency and success with which he has investigated the toxic of cotton seed meal on hogs and the discovery of a means by which it could be utilized with safety in a ration for this class of animals. The experiments cited were originally carried on for quite an extended period of time with guinea pigs and rabbits. Iron salts were used to overcome the toxic effect which cotton seed meal is supposed to produce in certain classes of animals after the expiration of a given period of time. It was found that when the iron salts was used the life of both guinea pigs and rabbits could apparently be prolonged for an indefinite period of time and cotton seed meal be made one of the principal constituents of the ration. When the iron salts was withheld, both guinea pigs and rabbits died in a comparatively short period of time. The success attained led the investigators to try their results on hogs. Twelve pigs were selected for this purpose, weighing about 50 pounds apiece. They were placed in two separate lots. The daily ration consisted of one-half pound of cotton seed meal and one and a half pounds of corn meal. One lot of hogs received a solution of the iron salts while the ration was increased in volume as the animals grew. Green feed was witheld and the animals were not allowed any exercise save that obtained in the small pen in which they were confined. These conditions were instituted in order to increase the severity of the test. At the end of 12 weeks four of the pigs fed cotton seed meal and corn meal without salts were dead. The other two had only made a gain of 35 pounds apiece. The six pigs which received the iron salts made an average gain of 54 pounds, or more than one and a half times as much as those fed on the first ration mentioned. These results indicate therefore that certain salts of iron have the power to mitigate any toxic effect which may be attributed to the use of cotton seed meal in a ration for hogs.

Every one realizes that corn in itself is not a desirable feed for hogs. First of all, it does not contain enough mineral or muscle-making material. The gains from the corn alone are therefore costly and rather slow. The high price of corn renders its use as the sole concentrate for the finishing of hogs almost prohibitive in the South. Some material containing protein of a relatively cheap and desirable form must be added to a ration of corn to secure the best results. Cotton seed meal would naturally be the food stuff selected for this purpose and now it would appear that a method has been discovered by which it can be used with apparent safety. Farmers should not conclude from these results that it can be fed without discretion, care and good judgement, and the method advised must be tested out on a larger scale before definite conclusions can be drawn; but every one should look into this question and satisfy himself concerning its practicability.

To this end he should secure some copperas and dissolve one pound of it in 50 gallons of water, or in other words, a barrel of water. For each pound of cotton seed meal fed take one gallon of the above solution and mix thoroughly with the grain ration which may constitute for a 100 pound hog as much as one pound of cotton seed meal and four or five pounds of corn or corn meal. If the hog weighs only 50 pounds do not feed over half a pound of cotton seed meal and use only half a gallon of the copperas solution. For still smaller animals feed in the same relative proportion.

The wise farmer will test out this new method carefully and on a small scale until he is satisfied that the deductions made by Prof. Withers are correct. It is believed that he will secure satisfactory results from these tests and it is needless to point out the advantages which will come to him if cotton seed meal can be made a definite part of the ration for hogs in the South and fed with safety through the addition of a small quantity of a solution of copperas to the daily ration.

* * *

The above article which appears in The Oil Miller was referred by its editor to R. E. Montgomery, chairman of the publicity committee of the Oklahoma Cotton Seed Crushing Association, and he takes issue with Mr. Soule as to there being a toxic effect in cotton seed meal fed to hogs. He says:

"In the first place, I am going to deny that there is any toxic effect on hogs from eating cotton seed meal, for the reasons that none of the experiments made and reported from the different experiment stations have proven anything of the kind to me. Above all, the chemists have been looking for this poison in cotton seed meal for the past 16 years, and up to this time I have not seen where they have made the discovery. On the other hand, from my experience and from the experience of a large number of friends in the practical feeding of cotton seed meal to hogs, it has been clearly proven to me that there is no toxic effect on a hog caused from the eating of cotton seed meal."

It is possible Mr. Montgomery is

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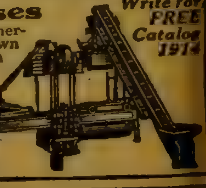

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correct in the above opinion, but we would suggest that hog feeders experiment carefully before taking this opinion over that of Mr. Soule. Cotton seed meal is a fine feed, and if its use may be extended amongst our poultry people a greatly increased output will be made for one of California's large productions.

MILK PER ACRE

How much milk per acre does the dairy farm in California produce? We imagine but few of our dairymen have figured it out on this basis, but it would be interesting to know whether California land is producing up to the limit. We venture it is above the average. This question has been investigated by the Dominion department of agriculture, or by the branch of it at Ottawa, and from its deductions we quote:

"If it may be assumed that the farm of the average factory patron is fairly well adapted to dairying, that the patron himself is inclined towards dairying, rather than, let us say, fruit growing, and that his cows are fairly good, then it will be of interest to note how the farm is made to respond to this dairy inclination.

"There are frequently noticed yields as low as 250 pounds of milk per acre cultivated including pasture, but some good patrons obtain 750 and 800 pounds per acre. Even this is little enough, for there are plenty of authentic records of 1100 and 2100 pounds of milk per acre. It should not be extremely difficult to obtain more than this, even 2500 or 3000 pounds.

This latter figure is a long, long way ahead of the yields already mentioned of only 250 pounds which may be found on many a so-called dairy farm in Canada, and is indicative of the possibilities in reach of the factory patron, who is really anxious to attain first rank.

"It is questionable if the average yield per acre in Ontario is much more than 600 pounds of milk. If loyal, whole-hearted support is given to the local factory and to our national industry of dairying, the farm and the dairy herd will be made far more productive. Great help will be derived by keeping individual records of each cow, because the old-established, complacent "average" cow has no intention whatever of assisting the average patron to get 3000 pounds of milk from the average acre. The first necessary step is to know for certain that each cow is a good producer, then one may aim with more hope at $30 or $40 per acre."

STARTING IN THE SHEEP BUSINESS.

The following questions have recently been answered by Prof. F. W. Wilson, animal husbandman of the Arizona agricultural experiment station at Tucson:

Question. It is my intention to contract for 4,500 aged ewes, mutton type, bred to Tunis bucks if possible, if not, to some other mutton breed, bucks put with ewes June 1st, to be herded on the best mountain ranges and delivered with reasonable cutback October 20th.

Answer. I will say to this plan that it would be rather difficult to purchase ewes mated to Tunis rams and possibly even to rams of some of the best mutton breeds. You would probably have much better luck if the ewes were mated about the middle of June rather than along the first of June.

Question. These ewes I will try and procure from the Flagstaff country and understand they are priced at $3.75, same class of stuff bringing a quarter less last season.

Answer. It strikes me that $3.75 is about as reasonable a price as you could expect, perhaps just a little bit cheaper than good first class stuff can be bought at this time.

Question. I had figured on lambing 1,500 ewes from each of three camps, doubling up ewes and lambs from the three camps according to ages, making bands about 1,000 ewes and their lambs, dry ewes and ewes that have lost lambs and no other lamb adopted to be disposed of as soon as lambing period is over.

Answer. Your plan of cutting your bands up into 1,500 ewes is all right, but I would cut them down to smaller bands; 250 ewes in a band is about all that can be handled successfully from time to time, in fact I believe it is the maximum we should try to handle on alfalfa land, and if viewed from the standpoint of ownership of the land it is highly desirable that there be not over 250 ewes in a band. From the standpoint of best gains possible and best possible care of the ewes it is desirable that they be put in bands of from 200 to 250. If this is not practicable of course you can manage the sheep as I shall indicate later.

Question. What percentage of lambs can I reasonably figure on under the above conditions?

Answer. Generally from 100 to 125 per cent.

Question. What per cent of bucks would you advise to insure the highest possible number of lambs?

Answer. Two to three per cent.

Question. Should bucks be left in the bands over two months?

Answer. No; 65 days is sufficient.

Question. Should ewes be on lambing grounds a few days before the lambs begin to come?

Answer. Yes, if possible.

Question. Where 1,500 ewes are lambed from one camp by careful men, not crowded, no dogs about, can it be managed to advantage?

Answer. Yes, if the band is drifted a short distance away each day, allowing the young lambs born the night before to remain on the bedding ground, and as the lambs grow a little older gradually drifting them back into a larger band. I will refer you to Bulletin 69, "The Improved Types of Sheep for the Southwest," in which you will find a chapter on the methods of lambing as generally practiced by sheep men in this state.

Question. What breed bucks other than Tunis would you recommend for the above?

Answer. Hampshire and Shropshire.

Question. What are they worth?

Answer. Usually from $10 to $15 each, possibly a little less. We sold our grades last year for $8 or $9 a head.

HOW TO KILL THE FLIES THAT GET INSIDE.

If by any mischance flies enter the house, the next thing is to kill them. Any home-made trap to catch them so they can be drowned or burned will answer, or sticky paper may be used, then burned.

The doors and windows may be closed and twenty drops of carbolic acid sprinkled on a pan of live coals. The vapor will kill them. Pyrethrum powder may be sprinkled on a shovel of live coals and carried about the room, then the flies swept up and burned.

For poison, use two tablespoons of formaldehyde to half pint of water. Place in plates or saucers, sweetened slightly to attract the flies; or use poison fly paper, as directed. One must exercise care when using poison that children do not get it, or the dead flies drop into food. It is a good plan to place poison on the porch or near the door where flies enter to kill them before they get into the house. A shelf may be attached to the door casing to hold the poison, bringing it near where the flies congregate on the screen and out of the way of children or pets.

HOLSTEIN-FRIESIAN ANNUAL

At the recent annual meeting of the Holstein-Friesian Association of America, held in Chicago, annual reports were made and officers elected for the coming year. In the attendance we note that California had only one representative at the meeting, Mr. J. W. McAllister. The secretary reported many additions to the membership at this meeting, and at the end of the meeting the total accessions during the year were reported to be 1079, with a total present membership of 6,600.

Some idea of the magnitude of the association may be had from the fact that its bill for postage during the preceding year was approximately $5,000.

The president reported that the total reserve fund, with its accretions of interest, is now the immense sum of $151,368.30.

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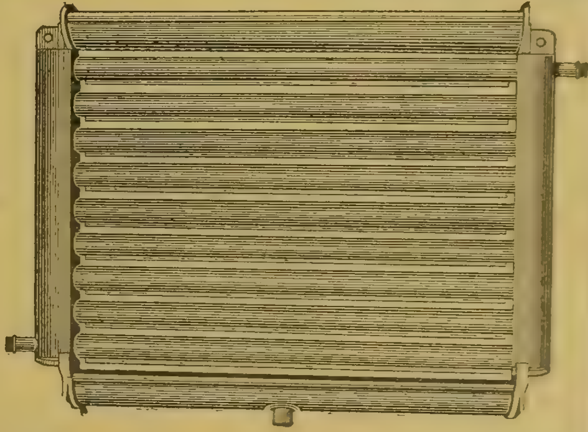

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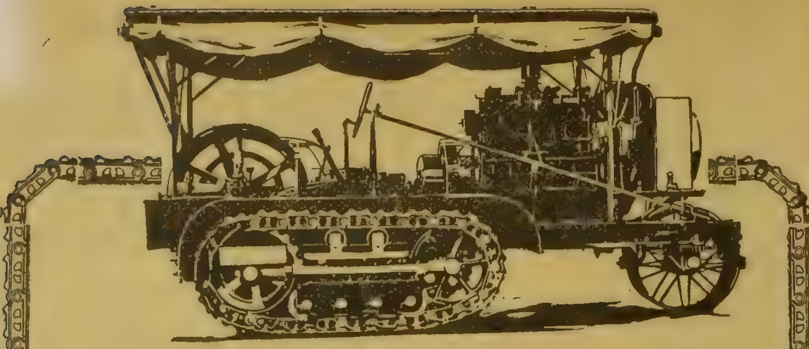

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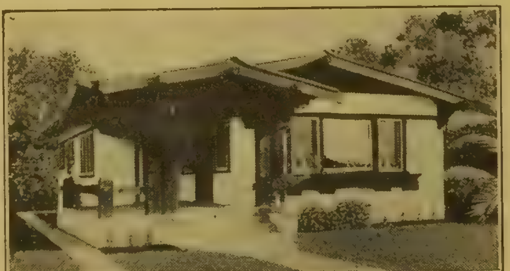

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Profit in the Poultry Yard

RAISING RUNNER DUCKLINGS.

Written for the California Cultivator
By Jean A. Koethen.

There is nothing quite so cunning and captivating among young poultry, not even excepting the downy baby chick, as a flock of Runner ducklings two or three weeks old. They hold themselves so erect; their carriage is so "racy"; they run so fast and forage so energetically, it is no wonder they lure many a feminine heart simply by their cuteness, and irrespective of their commercial qualities. The Pekin duckling is funny and lovable at first, but it soon gets fat and soggy, and is always panic-stricken if you approach. Runners are less timid and keep their cuteness till they are grown. I have never seen a breeder of Runner ducks that was not enthusiastic over them, and they are coming into favor very rapidly indeed.

The raising of young ducklings is a very much simpler matter than the raising of chickens and turkeys, and methods are practically the same, whether you have Runners or some other variety. A duckling is a duckling, and while the Runner may be a little less hardy than the Pekin, any difference in the handling will be in quantity or quality of care, and not in principle.

Raising ducklings really looks at first sight like a lazy man's job. In the first place, there is no question of keeping them free from vermin, though I have heard that occasionlly ducks that are neglected will be troubled a little. No spraying or disinfecting of coops is needed, no dusting or greasing. All this labor is eliminated outright if you have ducklings. In the second place, they require less warmth in their infancy. To be sure, many hatch with hens and then let the hens brood their foster progeny for a couple of weeks, but just as many take them from the hens at once and keep them in fireless brooders. My Pekin ducklings this spring were put in a fireless brooder, which was nothing but a small box covered with an old wool sweater and a burlap sack. Clean litter was put in each night, and when the nights were chilly we put the ducklings to bed at five o'clock or thereabouts. They were out on the ground all day and never seemed cold. Had I known then how careful some people are to keep them warm at first I should have fussed over them all the time, as I do over brooder chicks, but where ignorance is bliss it is just as well to be ignorant. The ducklings seemed comforable and they certainly grew like little pigs. Perhaps Runners need a little more warmth. I should certainly watch them, keep them in a protected place, and use hot water if it seemed necessary.

In the third place ducklings are far less susceptible to disease than chickens or turkeys. They are not subject to diseases of the respiratory organs, like swell head, roup and bronchitis. Their only vulnerable point seems to be the digestive organs, hence all precautions for preserving their health must be directed to care of the digestion. In the fourth place ducklings are not as easily injured by filth as chickens. This is not to say that they can be left indefinitely in dirty quarters, or that they do not require clean, dry bedding and coops, but only that they will not suffer as much or die as soon from such neglect as chickens would. This certainly ought to be a great recommendation to the lazy poultry person. However, no very lazy person will raise any kind of poultry long. That is pretty plain to the dullest observer.

The trouble with raising ducks is, you can't set a pan of mash before them, throw a handful of grain once or twice a day, and let them raise themselves. Ducklings have to have moist mash three, and at first five times a day, and mixing this, rain or shine for several weeks, is a bit arduous. It is a joy to watch them grow, though, and the Runners repay one with a full egg basket at an age when even Leghorn pullets are in the nursery. In fact, the Runner duck is called "the Leghorn of the duck family", probably because it is really more profitable and more easily raised than a Leghorn.

My friend, Mrs. J. J. Harrison of Eagle Rock has been very successful in raising Indian Runner ducklings, and she has given me this account of her method for the benefit of Cultivator readers:

The ducklings are usually hatched with Plymouth Rock hens, but this spring, sitting hens being scarce, several clutches of eggs were hatched by ducks which became broody. They proved to be excellent sitters, too, but of course it would have been too much to expect them to mother the babies.

After two days of quiet in the nest, —for all the duckling needs at first is warmth and rest,—they were put in a wooden coop with what Mrs. Harrison calls a "jug-mother," namely a jug of hot water wrapped in flannel and set in the corner of the coop, which is so partitioned off that at first the ducklings cannot get far from the "mother". When the ducklings were let out in the middle of the day the jug stood outside where they could run to it if they felt chilly. As the cool of the evening came on the "mother" was refilled and replaced in the coop where the ducklings could nestle about it and yet be free to go in and out as they chose until night, when they were shut in. Ducklings do not like the confinement of the fireless brooder box. I discovered that with my Pekins. They never would go in themselves. We had to put them in every night, and no matter how carefully they were covered they were nearly always out in the morning.

The "jug-mother" seems on this account a better foster mother than the fireless brooder. The one objection to it is that the water will get cool by morning no matter how carefully the jug is wrapped! I do not know how Mrs. Harrison managed about this. I have myself gotten out of bed before daylight of a cold spring morning to warm up the "mother", when I had a brood of chicks I felt particularly fussy about, but one would hardly do that for ducklings.

Feeding Runner Ducklings.

The first two days after they are hatched Mrs. Harrison's ducklings get nothing but water and grit. The water is in a chick fountain, for at this tender age a wetting might be fatal. Runner ducklings are particularly sensitive to dampness, and care must be taken to keep bedding, ground and bodies dry.

The third day a little bran is mixed with grit and charcoal and moistened with warm water so that it is just crumbly. The ducklings will not eat much at first, but there is no harm in leaving the dish before them. Unlike turkeys, they will not eat till they are ready, nor more than they need. This mash of bran and charcoal and grit is fed five times a day the first ten days, and always with each meal comes the fountain of clean water. I gave my Pekins warm water to drink the first ten days because I had read that cold water might cause cramps, but Mrs. Harrison does not think this necessary. The water she gives them, however, is not very cold.

Mrs. Harrison has found that there is a little tendency to looseness of the bowels when this moist mash is fed. When this appears, a hard boiled egg is mixed in the mash. This always has a constipating effect.

Some time during the second week the mid-forenoon meal is replaced by a meal of cut clover or alfalfa, and soon the afternoon meal is replaced in the same way. This reduces the number of meals to three, with green between meals.

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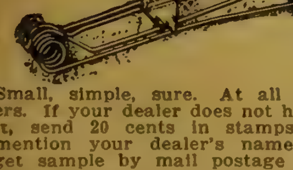

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meal and a handful of bread crumbs are added to the mash, and this ration is continued till the ducklings are three weeks old.

No beef scrap is used till the ducklings are three weeks old, because Mrs. Harrison is afraid of its effect on the bowels. At this time a teaspoon is added to the mash once a day, and this is gradually increased. If there is any looseness of the bowels the moist mash is now discontinued, and the mash given dry with water to wash it down, for a duck cannot eat dry food unless it has wate. to moisten it with.

At six weeks of age the ducklings receive the following ration: Bran—1½ pints, Cracked corn—1½ pints, beef scrap—¼ pint (in the morning only).

Charcoal and grit are always added to the mash, and the ducklings get green feed once or twice a day betweeen meals.

Animal Food Necessary.

Mrs. Harrison's method differs in three respects from that followed by most duck breeders: (1) The green feed is given separately instead of being incorporated in the mash. (2) Bran is used exclusively for the ration where most breeders add corn meal or corn meal and middlings. (3) Beef scrap is used more sparingly than most persons think necessary to produce the best results.

Whether there is any special advantage in mixing the green feed with the mash I do not know, but I think it would give bulk to the ration and prevent the bran from packing in the gizzard. Bran is apt to be too laxative, and this tendency is overcome by mixing corn meal and middlings with it. On the other hand the bran alone is a cheaper ration, and the ducks fed on it certainly grow and thrive. The addition of beef scrap and cracked corn after three weeks gives the balance which is needed, but there seems little to fear from using more beef scrap.

My own experience has been with Pekins, but I found them able to digest a much richer ration than Mrs. Harrison's. The first two days they were given bread and milk. This was changed after these two days to a moist mash of bran, corn meal and bread crumbs. At the end of the first week a little beef scrap was added, and by the end of the third week they were on the Cornell mash of equal parts of bran, corn meal, middlings and beef scrap, with grit and cut alfalfa always added. I never measured the alfalfa, but aimed to make it about one third of the whole. Perhaps this would be a little too rich and forcing for Runners, but one could easily tell by watching the bowels whether they were getting too much beef scrap. I think such ration is less likely to cause looseness of the bowels than bran alone. My Pekins had no charcoal, and not always grit, but they have never been "off their feed" a minute, and weighed three pounds before they were six weeks old.

Feeding any kind of poultry is a matter of principles rather than particulars, but there are a few things one must remember whatever ration is used: Feed bread and milk or something equally simple the first two days. Add beef scrap gradually after the first week, and watch its effect on the bowels. Give fresh water with every meal, and keep water always before them after a week or ten days. Moist mash and cracked corn should be the only grain feed of ducklings. Green feed should never be omitted for a single day. Lack of it leads to digestive disorders. Grit or sand should always be part of the mash.

Until the ducklings are three weeks old water should be given for drinking purposes only. After this they may have a large pan or pail or tub in which they can bathe, but the water must be changed three times a day. Ducks can get along quite well without bathing, but they must have a dish large enough to dip their heads in, or their eyes will get sore.

Shade Very Important.

Shade is as necessary for ducklings as a proper ration. They are sometimes sun struck in summer when this is neglected. Nothing is quite so good for shade as a spreading tree, but if this cannot be had frames covered with burlap should be provided. For some reason ducklings suffer even more than chickens from the direct rays of the sun.

Clean litter for the bed and clean ground to run on are also necessary. Ducks can get along without sanitary surroundings for a good while, but the piper is to pay sooner or later, and they grow faster if they are comfortable.

Indian Runner ducklings usually begin to lay at four or five months of age and keep it up right through the year, with perhaps two months out for the molt. Their eggs bring from two to five cents a dozen more than hens' in the Los Angeles maket, and it is not exceptional for a flock of good strain to average 180 eggs per duck. It looks as if Mrs. Biddy would have to watch out, since the Indian Runner is on the job. It comes to laying naturity earlier, lays more eggs on cheaper fare and the eggs bring a higher price. What more can any one ask?

ROUP

Roup is somewhat like la grippe in human beings, according to what a physician once said when he was called to treat an afflicted family. The whole house was sick. All had the same malady, and each one showed different symptoms. To use his own expression, "La grippe is very accommodating. If you don't want it one way you can have it another."

Where there is a hard swelling, open and remove the discharge. Disinfect the wound, and if not too bad, the individuals may get well. We have saved turkeys, which seem to be subject to this particular form of roup more than chickens, by this method. The fowls should be isolated, and under no condition be used for breeders. If they are there will be a flock of chickens constitutionally weak, and there will be more complaint of roup next year.

There is a pretty good opportunity to apply the golden rule to this case in regard to selling them as soon as they take it. Would you or we like to eat chickens that have had a disease indefinitely? Because there was no outward sign in particular until a few days before they died is no good reason that they were fit for food.

Take those fowls promptly from the roosts and move to isolated quarters. Examine, kill and burn the ones that are in the worst shape. Clean the house, spray with a strong disinfectant and burn all litter.

If you wish to treat the more mild cases cleanse the mouth with a wash made of one tablespoonful creolin added to four fluid ounces of water. In the case of a very thick membrane having formed touch the spot with straight creolin on a swab, being very careful to not get any of the drug into the windpipe or your bird is a dead one. The membrane can then be removed without bleeding.

Only in the case of very valuable fowls is it advisable to give treatment to the flock as a whole. The more birds you cure that are afflicted with genuine roup the more future trouble you will have with roup.—Wisconsin Farmer.

HE BARQUED

Willie was struggling through the story in his reading lesson. "No, said the captain," he read, "it was not a sloop; it was a larger vessel. By the rig I judged her to be a-a-a-a-a—"

The word was new to him.

"Barque," supplied the teacher.

Still Willie hesitated.

"Barque!" repeated the teacher, this time sharply.

Willie looked as though he had not heard aright. Then, with an apprehensive glance around the class, he shouted:

"Bow-wow!"

Good advice may help a man, but a good scare is often more effective.

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PETALUMA
bought 500,000 lbs inside of six months and is now buying 100,000 lbs monthly.
"PACIFIC PIONEER"
(Reg't Trade Mark.)
Write for free sample, prices and feeding test reports.
Western Tallow Co.
42 Beale Street
San Francisco, - - Cal.

The Summer Season
Don't expect to cram for eggs in the fall without preparation during the summer.
COULSON'S
EGG FOOD
used during the summer will reward you with a good egg yield in the fall. Secure it from any reliable poultry supply house.
Coulson Co
PETALUMA, CAL.

MRS. BASLEY'S
Poultry Book
For Pacific Coast Conditions
$1.00 Postpaid
GERMAIN SEED CO. 326 So. Main Street Los Angeles

What Does a Silo Cost?

AN IDEAL GREEN FEED SILO will pay for itself the first year. That being the case, it will cost you nothing.

AS A MATTER OF FACT, THE COST of a silo is really a secondary consideration, because if you are keeping dairy cows or raising stock for the market, there is no investment which you can make which will pay you better returns than an **Ideal Green Feed Silo.**

A GOOD SILO IS A NECESSARY PART of the dairy equipment of every cow owner or stock raiser who wants to realize a reasonable profit from his herd, and if the matter of cost has been standing in your way, please remember that it is really not a question of whether you can afford to erect a silo, but whether you can afford to do without one.

IF YOU HAVE NO SILO, A LITTLE investigation will be sure to convince you that you ought to purchase one right away.

THE SHREWDEST AND BEST POSTED ranchers in Pacific Coast States are buying **Ideal Green Feed Silos.**

Write for new Silo Folder A for full information.

Ensilage Cutters and Alpha Gasoline Engines.

DE LAVAL DAIRY SUPPLY CO.

101 Drumm St. 1016 Western Ave.
SAN FRANCISCO SEATTLE

PACIFIC COAST AGENTS FOR JAMES BARN EQUIPMENT

COTTONSEED MEAL

is the most economical feed on the market today. All farm animals thrive on it. The best butter producer known. For chickens it has no equal—it makes hens lay. As a feed for horses and mules it is a proven muscle builder. Excellent for fattening hogs.

Read the following letter from the Cudahy Packing Company:

Messrs. Willits, Patterson & Green, June 18, 1914.
343 So. Hill St., Los Angeles, Cal.

Gentlemen;—

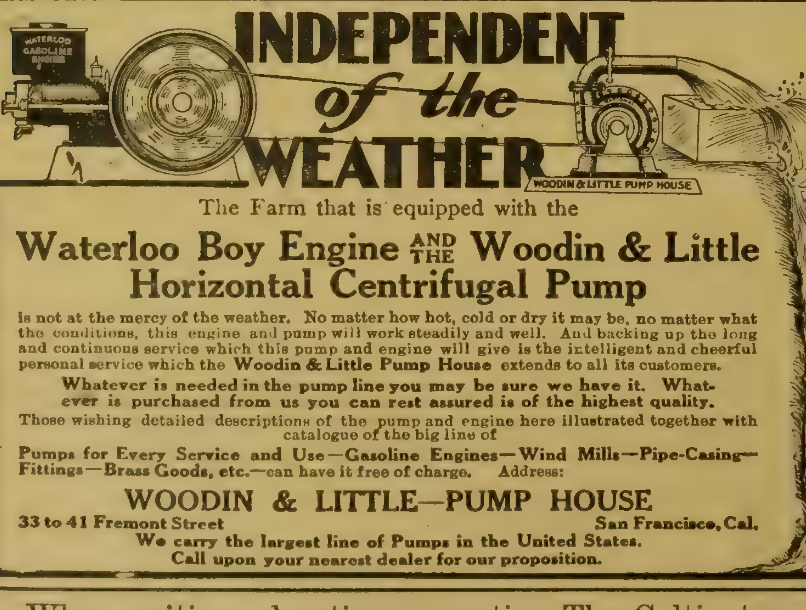
In response to your inquiry as to the desirability of Cotton seed Meal as a food for cattle, we beg to advise that we killed a large number of cattle last winter and during the early spring months that were fed on cottonseed meal. The quality of the beef proved quite satisfactory and the percentage of yield compared to live weight was very good. We believe it to possess very valuable qualities for the fattening of live stock.

Very truly yours,
THE CUDAHY PACKING CO., R. Scott, Manager.

Send for interesting FREE BOOKLET—it tells "how and why" to feed COTTONSEED MEAL.

COTTONSEED MEAL can be found at most feed dealers.

Imperial Valley Oil & Cotton Co., Mfrs.
El Centro, Cal.
For Booklet Address
WILLITS, PATTERSON and GREEN, Los Angeles
(Exclusive Wholesale Selling Agents)



INDEPENDENT of the WEATHER

The Farm that is equipped with the

Waterloo Boy Engine AND THE Woodin & Little Horizontal Centrifugal Pump

is not at the mercy of the weather. No matter how hot, cold or dry it may be, no matter what the conditions, this engine and pump will work steadily and well. And backing up the long and continuous service which this pump and engine will give is the intelligent and cheerful personal service which the **Woodin & Little Pump House** extends to all its customers.

Whatever is needed in the pump line you may be sure we have it. Whatever is purchased from us you can rest assured is of the highest quality.

Those wishing detailed descriptions of the pump and engine here illustrated together with catalogue of the big line of

Pumps for Every Service and Use—Gasoline Engines—Wind Mills—Pipe-Casing—Fittings—Brass Goods, etc.—can have it free of charge. Address:

WOODIN & LITTLE—PUMP HOUSE
33 to 41 Fremont Street San Francisco, Cal.
We carry the largest line of Pumps in the United States.
Call upon your nearest dealer for our proposition.

When writing advertisers, mention The Cultivator.

Questions and Answers

THE EDITOR AND STAFF

Questions to be answered in this department should be received at this office one week before reply is expected. Write plainly on one side of the paper and sign full name and address. Unsigned communications receive no attention.

Pest of Citron Blossoms

We have received from a subscriber at Petch Tikwah, near Jaffa, Palestine, package containing blossoms of citrus medica, the citron of commerce, and the subscriber says they are infested with Pray's citri. The blossoms were submitted to an entomologist, but owing to their dried and broken condition nothing could be determined. There appears to have been an infestation of some eating insect, in fact, there is an indication that the larvae of some insects have infested the interior of the blossoms, but as to what it is or the method of handling we are unable to tell. The subscriber writes that Dr. Silvestri of Italy has suggested the use of a one per cent solution of arsenate of lead. While it seems that a one per cent solution is rather weak, if sprayed upon the blossoms of the citron it might be as strong as could be used. But worst of all, the subscriber writes that this treatment did no good. Perhaps it was not timed right. We would continue to follow Dr. Silvestri's suggestion, for he is one of our greater economic entomological authorities.

Alfalfa Tea

A subscriber has written in regard to an article at one time published by a gentleman by the name of Dr. Suddith, giving method of steeping or preparing alfalfa for hog food. We are unable to find in a fairly complete bibliography on alfalfa any reference to any such article. However, we referred the matter to Prof. Woll of our state university and he replies that there did appear an article on this method of feeding, he thinks, in the Saturday Evening Post of about two years ago, written in the usual style of that paper. It referred to feeding hogs on alfalfa tea in place of skim milk. Professor Woll says he did not see the article, but thinks the statement was made that the alfalfa left after the making of the tea was richer in digestible protein than ordinary alfalfa hay.

Black Scale

I enclose apricot twig with something on it which I think is scale. What is it?—Subscriber, Hayward.

The twig is infested with a healthy looking bunch of black scale. Spraying with distillate emulsion or any of the better contact washes will control the pest.

Soil for Mushrooms.

In making beds for planting spawn for mushrooms will it be possible to use commercial fertilizers in place of horse manure, which is usually recommended? Perhaps this would be more expensive than the manure, but the latter is hard to obtain.—Subscriber Los Angeles.

We do not think this would prove successful, unless the soil chosen were naturally extremely rich in humus. It is not a question of the fertility in the horse manure so much as the physical condition which the growth of the spores requires. Especially is the matter of temperature a factor and this can be secured only by the use of a substance having the character of horse manure, and that must be especially well supplied with coarse, strawy material. The method of handling this material is to pile and after wetting slightly permit to heat and then to lose part of its heat until the temperature shall be reduced to 100 to 115 degrees. Then it is to be packed firmly in beds and the temperature reduced to 90 or 100 degrees and the spore carrying material inserted. In fact there is practically no soil or loam used in this excepting that some prefer a surfacing of one to two inches of good rich loam on top. Would suggest that the inquirer write to the United States Department of Agriculture, Washington, D. C., and ask for the Farmers' Bulletin 53, How to Grow Mushrooms, also Farmers' Bulletin 204, Cultivation of Mushrooms.

Curing Tobacco.

Please give method of curing tobacco.—Subscriber, Lindsay.

From an address given by Mr. Hearst of the Dinuba Chamber of Commerce we take the following regarding curing of Turkish tobacco. Of course there are other methods of handling other kinds: "The leaves of the Turkish tobacco are strung on strings about three feet long and hung in the hot sun for a week or more, or until it has attained a rich, golden color, when it is taken down and hung in the curing shed until the rainy season, at which time it becomes pliant or "in case," as it is called, making it in proper condition to be bulked, when the sweating process begins, and at which time it is ready for the market." In addition, if our subscriber is interested, would suggest he write the U. S. Department of Agriculture and ask for Bulletin 138 of the Bureau of Plant Industry, Production of Cigar Wrapper Tobacco, also Bulletin 143, Principles and Practical Methods of Curing, also Bulletin 268, Tobacco Marketing. The agricultural experiment station of Kentucky at Lexington has also issued Bulletin 139, Tobacco Cultivation, Curing and Marketing.

Alfalfa in Orchard.

I have a 40-acre orchard, mostly in peaches seven or eight years old. The trees are 20 feet apart. I would like to raise a 10-foot strip of alfalfa between rows. I have been told that it would cause black knot.—Subscriber, Sanger.

The growing of alfalfa will not cause root knot but the application of the amount of water required by alfalfa might possibly create soil conditions which would encourage its growth. The nodules or small excrescences growing on the roots of alfalfa have no relation to the disease known as root knot.

Government Lands.

Is there any government land in Oregon that will soon be open to settlement? If so, in what part of Oregon? —Subscriber, Madera.

Without question there is government land still available in Oregon. As to whether this is desirable and near transportation facilities we are not informed and only inspection or the employing of a qualified locator would determine that. While the land office usually gives out practically no imformation regarding lands would suggest that the inquirer write land offices in Oregon, of which there are seven. They may be addressed at Burns, LaGrande, Lakeview, Portland, Roseburg, The Dalles and Vale.

Drying Figs.

Where can I get information about drying figs?—Subscriber, Anaheim.

In next week's Cultivator we will give two articles on fig culture, addresses by Mr. Roeding and Mr. Markarian at the recent state fruit growers convention.. In the meantime gather such fruit as is ripe enough to drop, place on trays and stack.

Making Chrysanthemum Stems Stronger

What can I add to my foothill soil that will make stiffer chrysanthemum stems? The soil is light, sandy loam and has been well enriched with stable manure.—Subscriber, San Bernardino.

This question was referred to Professor Charles B. Lipman of the state university and he answers:

"The tendency of plants to grow rank where an excess of stable or barnyard manure is employed is very well known and it is no more characteristic, of course, for chrysanthemums than for any other plant. I should, therefore, advise your inquirer to desist from the use of any more organic manure for at least two or three seasons and use superphosphate at the rate of 800 pounds to the acre, and sulfate of potash at the rate of 50ﾉ pounds to the acre to more nearly balance the plant food solution of the soil. The application of small quantities of lime, say at the rate of a thousand pounds to the acre, will also be beneficial.

Corn Worm.

This department recently gave information received from Mr. Hersom regarding the torch method of catching the moths of the corn worm. Mr. Hersom writes that he is receiving many letters and as these take much of his time he adds a word of explanation for Cultivâtor readers. Mr. Hersom states one inquirer asks, "Why not use coal oil?" but he fears the odor will keep the moths away. We think, however, that kerosene has been used successfully. A San Bernardino grower suggests the use of a frame 2x4 feet, four inches deep, with an electric light in the center, with oil. He states his first night's catch was 507 moths.

TABLE GRAPE SHIPPERS

(Continued from Page 27.)

the state legislature to have a law adopted that will prevent this malpractice in the future, but such a measure cannot be taken up in time for the present crop. We shall take other steps, however, to meet this problem this season. We are promised effective cooperation on the part of the prominent shipping firms, to correct this abuse of the past, and stop the shipping of sour green grapes this season.

The above are a few things the California Green Fruit Association can do.

To do them quickly and successfully requires your cooperation; that you come in and join hands with us for our mutual benefit.

Without pay or any hope or desire for pay, the present directors of this association have given time and money, attended local meetings of growers day and night, at their own expense to promote this association for your benefit and that of every other table grape grower. We have secured an agreement from all the prominent firms of table grape growers that they will use every practical effort (and they have adopted an effective working plan at some expense to themselves) to route and divert all grape shipments so as to avoid gluts at auction points and consequent ruinous prices. Heretofore competing elements among the shippers were forced to do the best they could under a poor system.

They have endeavored in the past to get together to improve the system, but for sundry reasons have failed to do so.

When this association brought the situation squarely before all of the prominent shipping firms and showed them their past methods of distributing were detrimental to the interest of the growers only and had to be corrected, these same shipping firms agreed with us and showed every inclination to cooperate and now have agreed on a working plan that will eliminate abuses of the past in this particular.

If we should accomplish no more than that, which we have already done, the existence of our association would be more than justified. What we have accomplished up to date means directly more money in the future for your shipping grapes.

What our association intends and hopes to accomplish will give some stability to your end of the grape business in place of allowing it to remain a mere gamble.

Can't you see matters in the right light and at once sign the enclosed subscription blank at the rate of $1.00 per acre for the shipping grapes you own? Sign now and mail at once in the self-addressed envelope enclosed.

We already have over 4000 acres signed up, but need your help. Enclosed find subscription blanks. Please fill out and subscribe for one share for each acre of fresh shipping fruit you own or lease. Par value of each share is only one dollar.

We have canvassed the field, but for numerous reasons many growers found it inconvenient to attend the local meetings. We have not the time nor can we afford the expense to make another extended canvass.

Sign the enclosed subscription blank and mail to our office. Do it now.

Yours for improved marketing conditions.—California Green Fruit Association.

EIGHT-HOUR LAW

(Continued from Page 31.)

possible to control soil, sunshine and ripening conditions, neither can we adjust the process of decay, to say nothing of the cooking of meals, currying of mules, etc. The adoption of such a law would bring about anarchy and result in upsetting all organized labor. It should be defeated.

Leonard Coates, Santa Clara County.

The eight hour law, as applied to the farmer, is almost unspeakable in its unreasonableness. Farmers are always complaining of the unfairness of a legislation which enacts laws and imposes taxes on the agriculturist who has the elements and natural forces generally to contend with, on the same basis as with the manufacturer, the merchant, or any calling tributary thereto.

Why then can any of the farmers themselves be in favor of making a factory or store eight hour law applicable also to farm help?

But the farm help itself would be the greatest sufferer, and it would all react with tremendous force on industrial progress everywhere.

It is to me inconceivable that it should be thought worth while that arguments should be needed to show the utter folly of such a movement.

The farm laborer is not a factory hand, with a boss standing over him. Outside of "rush" harvest days, much of the time he is paid for is spent in loafing, in wet weather, for instance."

GRAVENSTEIN SHOW

We have a letter from Secretary Kelly, of the Gravenstein Apple Show Association at Sebastopol, giving dates of August 3-9 for the banner event of all Gravenstein apple shows. Of course, as usual, the show will be held at Sebastopol. Mr. Kelly writes:

"Practically all of necessary money is now in sight and the work of raising the balance and interesting the people in working up exhibits will be actively commenced at once, as will the advertising of the show. Every effort will be made to make this the banner show of them all and to attract a banner attendance.

"Two districts have already promised exhibits that will cost the association nothing and the others are expected to have their plans ready in a short time.

"The business men of Sebastopol have been very liberal in providing funds for the show, the Petaluma and Santa Rosa Electric Railway has promised liberal support and the county supervisors will be asked to make an appropriation at their next meeting. There is little doubt but that they will do handsomely as they have done by other fairs."

SEEDLESS LEMONS

As there has been some inquiry regarding the commercial success of seedless lemons we have written Mr. Irving E. Bush of San Bernardino County as to the seedlessness of a lemon which he has been growing for some years and as to its reception in the market. We have from Mr. Bush the following:

"The fruit has always been marketed with the Lisbons as we have not had enough to warrant separate shipment. Mr. Bert Stevens, manager of the Rialto Fruit Company, who has handled all the fruit for several years, claims the seedless lemon is juicier and more acid than the other varieties but I have never believed this. It is, in my opinion, no better than the standard varieties, excepting its absolute seedlessness, which is thoroughly demonstrated, but is as good as the best.

"There will be considerable production in the near future from orchards now set, and then we will know how the market will take to it."

CALIFORNIA RESOURCES

The 1914 annual report of the California Development Board has been issued, and as has been the custom for years one feature is the admirable map of California, showing the products of various counties.

A summarizing or review of business conditions in California, together with production of various crops, building activities, progress in various lines and most attractive figures as to the year's productions in canned goods, fresh fruits, dairy products, sugar beets, and, in fact, all kinds of field crops are given. It is a report meant to increase our pride in our own state. We doubt not the development board will mail copies on request.

The July Highway Bulletin, just issued by the California Highway Commission for free distribution, gives some interesting facts about progress on California's state highway. The work in each county is given in detail. It shows that surveys have been completed on 1888 miles, and that 607 miles of this is either completed construction or under contract, the greater part being a paved road having a four-inch concrete base fifteen to twenty-four feet wide. In addition about 100 miles is pending award. The Highway Bulletin will be sent without charge. Address a request to the California Highway Bulletin, Rialto Building, San Francisco.

MONEY MAKING LITTLE LINERS

In this department we will insert your advertisement under a classified head for 11 cents per line per issue. No ad accepted for less than [illegible]. Our classified columns are the clearing house for our many thousand readers.

MACHINERY

FOR SALE—2ND HAND WIND MILLS, TANKS, PUMPS, ENGINES
RANCH MACHINERY
POTATO MACHINERY
We Manufacture New Galvanized Tanks, Guaranteed Special Price

1000 gallons, $19.50, 2000 for $29.50. Header, fine shape, $125; Champion Binder, $75. Whittman Power Baler, Mowers, Cultivators, Harrows, Plows, Sundries.

ENGINES

To 40 H. P., not the 10 per H. P. kind, but engines that will do the work. Pumps and Pump Fittings

HOW'S THIS?

Biggest little Pumping Outfit ever sold at the price, 2½ H. P. Horizontal engine, upright jack and belt, new, $98. Capacity, 1200 gallons 100 feet. Demmitt Co., upstairs, 120 N. Main, Los Angeles.

We have pumps, motors and engines of all sizes and for all conditions, which we will sell or rent. If you want a complete plant or any part, write us your needs and get our prices. Can give you special low price on engine and automobile oil, also belting Machinery & Motor Exchange, 756-768 S. Alameda St., Los Angeles, Cal. Main 6382.

For Sale—Used and new gas engines, 2 H.p. up, rebuilt and fitted with modern equipment. 22 years' experience enables us to repair and rebuild gas engines correctly. Get our prices. Lloyd, 806 N. Main, Los Angeles.

For Sale Cheap—Pumping outfit; 2 twin, 10-inch American pumps; 70 horse-power engine, oil burner boiler, oil pumps, etc. Apply to Mrs. A. A. Porter, Soledad.

MISCELLANEOUS.

Free for Six Months—My special offer to introduce my magazine "INVESTING FOR PROFIT." It is worth $10 a copy to anyone who has been getting poorer while the rich, richer. It demonstrates the REAL earning power of money, and shows how anyone, no matter how poor, CAN acquire riches. INVESTING FOR PROFIT is the only progressive financial journal published. It shows how $100 grows to $2200. Write NOW and I'll send it six months free. H. L. Barber, 430, 28 W. Jackson Blvd., Chicago.

FOR SALE
Perfectly equipped
propagating plant,
fine opening for an
all round man. Plenty
of deciduous and olive
budding.
Box 63, Rialto, Cal.

LIVE STOCK

Ohio Improved Chester White (O. I. C.)—A few male pigs of March and April farrow. Everything else sold Have a limited number of sows bred for October farrow. Am booking orders now for these. All stock cholera immune. Crated and registered free. C. B. Cunningham, Mills, Sacramento County, Cal.

Grape Wild Farm Thoroughbreds—Guernsey Bulls of A. R. Breeding. BERKSHIRE HOGS. Finest herd in the state. All ages for sale. A. B. Humphrey, proprietor, Mayhews, Sacramento Co., California.

Thoroughbred Berkshire Boars of all ages from developed and large-boned hogs. Riccomi Bros., Mountain View, Cal.

Glenview Poland China—Stock for sale. Chas. R. Hanna, R. F. D. No. 3, Riverside, Cal.

N. H. Locke Co., Lockeford, Cal.—Choice young Jersey bulls for sale.

Poland China Stock for sale, boars and gilts, D. M. Clark, Arlington, Cal.

HORTICULTURAL PRINTING

Catalogues for the seed and nursery trade. The live stock and poultry industries are a specialty with us. Two thousand illustrations to select from. Write for prices and samples. The Kruckeberg Press, 237 Franklin St., Los Angeles.

BEES AND HONEY

It Pays to keep bees and raise your own honey on the farm. We can supply gentle, Italian bees at reasonable prices any time. Write for our free catalog of bees, instruction books, supplies and fixtures. Spencer Apiaries Co., Box 14, Nordhoff, Cal.

RABBITS

New Zealand Reds, prize stock, young for sale; buy now and raise for the winter shows. Mrs. C. A Richey, R. F. D. 8, Box 557, Los Angeles

TREES.

Avocado Tree (Alligator Pears), the most valuable of all trees for California planting and surely the coming fruit industry. Some varieties stand more cold than oranges, grow faster, and require less care. I have several hundred fine, vigorous, field-grown trees of the Harmon variety from four to five feet tall, $3.00 each. Other standard varieties, including Taft, Walker, Ganter, Murietta, of various sizes and prices. W. A. Spinks, Duarte, Cal.

For Sale—One and two year-old Washington Navels and Valencia Orange Trees. Eureka Lemons and Marsh seedless grapefruit, for Spring 1914 delivery. Write for prices, or call and examine stock at Morris Citrus Nurseries, Cor. Juanita and Valley Center, R. F. D., Box 34, San Dimas, Cal.

The 1200-Acre Nursery, growers of 1500 varieties of trees and plants. OREGON NURSERY CO., Orenco, Oregon. Sales office, 522 Chamber Commerce, Los Angeles, Cal.

1000 Avocado Seedlings—Pots, also can furnish nice plants, bare root, at low price. A. A. Quint, R. D. No. 2, Pasadena, Cal.

For Sale—Eureka Walnut Trees, budded on Native Black Walnuts. Choice stock. Order immediately. Don't delay. Wm. Holve, Fullerton, Cal.

Citrus Nurseries, Murphy Oil Company, East Whittier, California. Selected stock for sale; inspection invited.

Wholesale Prices—Guavas, 7c; Chamaerops Palms, 5c; Date Palms, 30c; Ferns, 5c. Ballou's Nursery, Pasadena, Cal.

Budded Citrus Trees and seedlings at fair prices. Will take auto or land. J. P. Butler, Jr., P. O. Box 145, Lamanda Park, Cal.

FARM LANDS FOR SALE.

VICTORIA, AUSTRALIA, WANTS SETTLERS

Special inducements; government land, railways; free schools; cheap irrigation; 31 years to pay for farms adapted to alfalfa corn, grains, fruit, etc.; climate like California, ample markets; reduced passages; special excursion next November. Free particulars from F. T. A. FRICKE, Government Representative from Victoria, 687 Market St., San Francisco, Cal., Box X.

For Sale—Twenty acres adjoining prosperous town, one water stock in Mutual Water Co. with each acre Conceded to be the best beet and alfalfa land in the state. About 600 feet from the station and beet dump. Five-year beet contract if desired. Price, $200. M. G. McNeely, Alpaugh, Tulare Co., Cal.

For Sale—Seven acres fine land, eight-room residence, barn, etc., right on banks of Chehalis river; steamers land at door; quarter mile from station; two transcontinental railroads. Cost $3,000, sell for $2,500 cash. C. Daniel, Melbourne, Wash.

For Sale—40-acre alfalfa and fruit ranch, well improved, under irrigation, 2½ miles from Woodland, Yolo County. Easy terms. Call or write to Wm. Gould, Woodland, Cal.

Apple Orchards—Large and small, in the only apple producing section in California. The greatest section west of Missouri River. Write for booklet. Geo. W. Sill & Co., Watsonville, Cal.

Ranches, homes, acres, lots, exchange; send for free list. Wilson Bros., Santa Cruz.

POULTRY

CROLEY'S POULTRY CONDITION POWDER

is a wonderful help during the molt.

Try some. Your dealer has it.

How to Make Money—Mrs. A. Basley's latest Poultry Book is without exception the best ever written. The secret of how to raise every turkey hatched and the "Basley Formulas," now published for the first time, are worth many times the price of the book. The "Western Poultry Book" is a practical book by a practical woman. Price $1. Order from Cultivator Publishing Co.

Poultry Wanted—We pay the highest market price for all the local poultry we can get, no matter how large the quantity; also fresh ranch eggs. We remit immediately. National Poultry Co., successors to Allaway & Layton Co., 607 E. Third St., Los Angeles, Cal.

Barred Rock Cockerels (Hawkins' Royal Blue Strain) —ready for fall mating. All the popular breeds of baby chicks every week after Aug. 15th. Order early and avoid the rush. Enoch Crews, R. 1, Santa Cruz, Cal.

Baby Chicks—Jumbo egg strain. White Leghorns, $9; best Anconas, $12; Brown Leghorns, $9; White Minorcas, $12 per 100. Sand Ridge Hatchery, Kerman, Cal.

Barred Rock and R. I. Red baby chicks. If you want to raise some broilers send me your order. Price $10.50 per 100 until September 15th. J. W. Lyon, Gardena, Cal.

White Minorcas—The most popular utility breed of today. Prolific layers of large white eggs. Baby chicks, $12 per 100; eggs. Order early. E. Cauble, Kerman, Cal.

Barred Plymouth Rocks — "None better." Special prices for May and June. Write for 'em. C. H. Vodden, Los Gatos, Cal.

SEEDS AND PLANTS

Luther Burbank Spineless Cactus (Only)—Live stock fed on this velvet cactus, grow fat; hens lay more eggs, cows give more and better milk, and horses grow sleek. Why not get a start in the best, costs no more to raise than that which they call just as good. Ten slabs for $5.00, with one fine fruiting sort free. Address or call at H. L. Bauers' Cactus Nursery, 4401 Hammell St., Los Angeles.

If you want choice varieties of Burbank's Spineless Cactus, address Mrs. Mary R. Miller, Lakeside, California.

$ $ $ $pinele$$ Cactu$. All varieties Burbank's fruiting and forage plants 10c up. Plant now. Black Bros.' Nursery, 455 Lucas, Los Angeles. $ $ $

Berry Plants and Rhubarb. My new Berry Book ready about October will be worth sending for. Louis F. Scribner, R. F. D., Pasadena, Cal.

Thornless Cactus Slabs for sale at 5 to 15 cents each. Chas. R. Hanna, R. D. No. 3, Riverside, Cal.

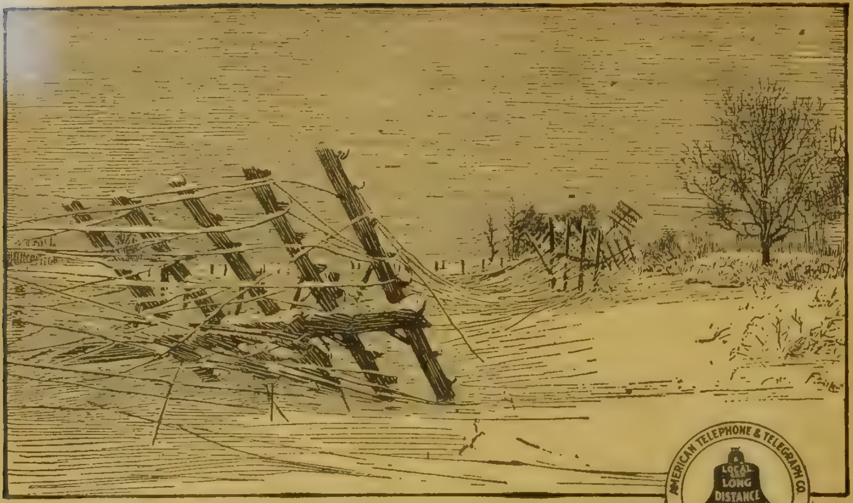
WANTED.

Poultry or Fruit—Young man, single, age 26, desires by Sept. 1st, responsible position on commercial poultry farm. Agricultural College training; ten years' experience. Would consider opportunity to learn something of the fruit business if work for winter is guaranteed. References furnished. State wages. G. Monteith, Box 135, Clint, Texas.

Nursery Trees Wanted—Almond, apricot, fig, lemon, olive, orange, peach, plum, walnut trees and grapes, for planting season 1915. Will you exchange for land, new subdivision, Yuba County? Dudley Moulton, First National Bank Bldg., San Francisco.

Farms Wanted—We have direct buyers. Don't pay commissions. Write describing property, naming lowest price. We help buyers locate desirable property Free. American Investment Association, 12 Palace Bldg., Minneapolis, Minn.

Wanted—To hear from owner of good farm for sale. Send description and cash price D. F. Bush, Minneapolis, Minn.



AMERICAN TELEPHONE & TELEGRAPH CO. — LOCAL LONG DISTANCE TELEPHONE — BELL SYSTEM — AND ASSOCIATED COMPANIES

The Telephone Emergency

THE stoutest telephone line cannot stand against such a storm as that which swept the Middle Atlantic coast early in the year. Poles were broken off like wooden toothpicks, and wires were left useless in a tangled skein.

It cost the telephone company over a million dollars to repair that damage, an item to be remembered when we talk about how cheaply telephone service may be given.

More than half of the wire mileage of the Bell System is underground out of the way of storms. The expense of underground conduits and cables is warranted for the important trunk lines with numerous wires and for the lines in the congested districts which serve a large number of people.

But for the suburban and rural lines reaching a scattered population and doing a small business in a large area, it is impracticable to dig trenches, build conduits and lay cables in order that each individual wire may be underground.

More important is the problem of service. Overhead wires are necessary for talking a very long distance. It is impossible to talk more than a limited distance underground, although Bell engineers are making a world's record for underground communication.

Parallel to the underground there must also be overhead wires for the long haul, in order that the Bell System may give service universally between distant parts of the country.

AMERICAN TELEPHONE AND TELEGRAPH COMPANY
AND ASSOCIATED COMPANIES

One Policy *One System* *Universal Service*

Do Your Banking
With a Big Bank

Thousands of the SECURITY'S depositors do all their banking by mail.

Those living out of the city are thus enabled to carry accounts with the oldest and largest savings bank in the Southwest, and receive the most liberal interest.

It is as easy and safe to deposit money and to draw out by correspondence as it is to do the same business over the counter.

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When writing advertisers, mention The Cultivator.

Household Department

MONTESSORI CHILDREN

Pretty Sally Pettigrew
Had a playful impulse to
Brain the baby with a brick,
Papa whaled her with a stick,
Mamma rose in wild alarm
To stay the sire's avenging arm:
"Do not whip the little elf—!
Let her educate herself!
Let no parent dare prevent
A little child's development!"

Little Mable Mimblemunch
Hid a snake in Papa's lunch;
Papa bit the snake and died;
Little Mable sobbed and cried.
Patient Mamma only smiled,
Saying, "Do not weep, my child!
You did nothing but obey
The playful whim that came your
way—
And how should little children learn
Were they thwarted at each turn?"

—New York Evening Sun.

THE YELLOW PERSIAN

Written for the California Cultivator
By D. Lamont Smith

When Bob Hastings went on a long-deferred visit to his married sister, Dorothy, he had a notion that he was in for a quiet time in the country, and this impression was confirmed when he arrived at a small wayside station to find his sister and her husband, Donald Rogers, waiting his coming in their little car.

"Hello! Don and Dot," Bob called gaily, as he swung across to where the car waited in the shade of a pepper tree. "Say, where's the town?" he added, glancing around inquiringly.

"Oh, everywhere," said Dorothy, "only you cannot see it for the trees."

So they chatted as the little car took them swiftly home, where Baby Bob, left in charge of the maid-of-all-work, was impatiently waiting to go through Uncle Bob's pockets, having pleasant remembrances of this pastime when on a visit to town the year before.

As the car swung through the rose-bowered entrance to the Rogers home its occupants could see the little fellow standing in the driveway with legs wide apart, while he vigorously waved a red bandana handkerchief on the end of a bamboo pole longer than twice his little body.

"Isn't he a dear?" said his mother. "Just look at those rosy cheeks."

"Some kid, all right," said Bob. Then as the boy's father stopped the machine to pick the lad up, he called cheerily:

"Hello! Little Bob. Come see what Big Bob has for you."

With a loving hug for mother and father, the child climbed to his uncle's knee, and the search for hidden treasure commenced at once, but it really was no search at all, for every pocket seemed to hold something that boys like. A candy dog here, a rabbit there and now a monkey with a long, springy tail that you held while the monkey dropped to the floor, then bounded right back to your hand in a most uncanny way.

Soon as the treasure hunt was over they left the car and entered the pleasant bungalow, where, after a tubbing, Uncle Bob felt himself able to do ample justice to the dinner that Jennie, the maid, had just announced.

Though it was past Little Bob's bedtime, his mother had consented to his remaining up for dinner with the grown-ups, in honor of Uncle Bob's first visit to the Rogers home. Thus it happened that during a lull in the conversation the baby's voice was heard:

"Mother, the Cat Lady was here aden today."

"She was? What did she do?"

"She didn't do nuffin. She just looked for that big yellow cat."

"Bob!" cried Dorothy, "I'll disown you as a brother if you don't catch that cat."

"Sure thing I'll catch him. What will I do with him when I get him?"

"Just give him to that poor woman. She is as deaf as a post and she moved into the old Brown place a month ago and that cat—a perfect beauty he is, too—doesn't seem to like his new home and won't stay there, but prowls 'round the country like a robber and she has worn herself to a shadow trying to catch him. Don here tried, too, but that cat keeps just far enough away so you cannot put your hand on him."

As Dorothy concluded her rather disjointed account, Donald Rogers said laughingly:

"For the peace of this household, Bob, I hope you may make good your boast. That cat has become the bane of my life. The old lady has neither chick nor child and she cares for that ungrateful animal above everything on earth, and to see her tramping round day after day and often far into the night has gotten on Dot's nerves to such an extent that she talks cat all day and dreams cat all night. You have a month to stay here and if you can't capture that feline in that time Dot will never forgive you."

"I'll get him, all right," said Bob.

But his brother-in-law only smiled.

* * *

The next day was one of California's best, and as Bob Hastings strolled through his brother-in-law's eucalyptus grove, he thought life in the country was well worth while, with the green underfoot and the warm sun overhead. But as he emerged from among the tall and slender trees and stood to view the panorama of vale and mountain that lay before him, he was startled to hear a child's voice say:

"Don't cry, Missus Lady, Uncle Bob is going to catch him for you. He said he would, his own self."

Peering carefully around, Bob discovered his little nephew and a woman, whom he correctly surmised to be the Cat Lady, seated on a rustic bench at the edge of the grove. The boy had evidently been trying to comfort the woman, for just then she looked up, and, understanding that the child was sympathizing with her, although she could not hear his voice, she smiled through her tears and patted his shoulder kindly. Then, rising slowly, she walked away, while the youngster watched her for some time, finally turning to discover his Uncle Bob regarding him with quizzical kindness.

"Well, kiddie, I suppose it is up to us to get that cat, all right. But how we are going to get him is more than I know. Can't you think up some scheme that will do the trick?"

"I don't know, Uncle Bob, unless you fish for him?"

"Fish for him? And what bait would you use, young man?"

"Mother says kindness is the best bait she knows."

"All very well, sonny, but it seems to me some meat would be even better if there was only some way of keeping hold of the meat while the cat ate it. By cricky! I've got an idea and I believe it will work, too. Say, Bob, has your dad got a fishpole about the house somewhere?"

"Yes, father has two poles, and I has a whole lot drowin' in the back yard."

"Bamboos, eh? Nothing better."

Hoisting the boy to his shoulder, Hastings made his way rapidly back to the house, determined to put his plan into execution at once.

"Say, Dot, got any tough meat about the place? And I want some catnip, too." Then, in answer to his sister's look of amazement, "I'm going after that cat."

With Little Bob skipping gaily ahead, Big Bob proceeded through the house to the bamboo clump, where a strong but slender rod was soon cut and trimmed ready for use. Then Dorothy appeared with a small piece of tough and gristly meat and a bottle of catnip extract.

"Will this do?" she laughingly asked.

"The very thing," said Bob. "Now for a fishing line."

This was soon secured from Donald's stores, and Bob proceeded to fasten one end of the line securely to the bamboo rod, while on the other end a cat's-bite of the toughest portion of the meat was firmly tied and then drenched with the catnip water.

Thus equipped and with a few sandwiches in his pocket in lieu of lunch, Hastings went valiantly forth in pursuit of the yellow Persian truant.

"Don't expect me until you see me, Dot," he called to his sister as he marched away. "I'm not coming back until I get him."

But though he searched diligently through the localities the animal was supposed to haunt, it was not until the sun was low in the west that he glimpsed a magnificent long-coated yellow cat with a bushy tail stealing quietly toward the poultry yards of what Hastings decided was the most perfect little home place of the many fine ones he had viewed that day.

Drawing the bottle of catnip from his pocket, he drenched the meat afresh, and followed softly down the alley after the cat. The animal was apparently aware of his presence, but showed no fear. Instead, he would stop and stare boldly back at his pursuer with an air that seemed to say plainly:

"Well, what do you want?"

Then on again to the yards of the model home, where he promptly climbed the closely boarded fence and dropped lightly into an unoccupied poultry run, in the center of which was a neatly painted feed and storage house with the door invitingly open. This the cat approached with cautious boldness, while Bob viewed his actions from the alley with a mingling of hope and apprehension. Hope that the cat would enter the building and apprehension that he himself would not be able to reach the door in time to prevent his escape.

After a careful investigation of the interior and a glance back toward the fence to see if his pursuer was near enough to be dangerous, the yellow Persian decided that all was well and stalked majestically through the door.

No sooner had he done so than Bob, who had watched his actions through a crack in the fence, rapidly removed his shoes and with a swiftness and noiselessness equal to that of the animal itself, scaled the fence and gained the door before his quarry had taken the alarm. Swiftly passing inside, Bob swung the door closed behind him and advanced cautiously toward the startled cat, but the animal retreated as far as the building would allow and for some time repulsed all of Bob's advances, whose first thought was to make friends with his captive, and this he eventually succeeded in doing by bribing him with meaty scraps which he had brought along for just such use.

By the time the yellow Persian was purring contentedly in his arms the best part of an hour had passed and Bob was beginning to feel as hungry as the cat had been. So, moving slowly with his prisoner and keeping a sharp watch to prevent an escape, he attempted to open the door, but found, to his surprise, that it was securely fastened on the outside.

Releasing the now friendly cat, Hastings repeatedly tried to force the door, but unsuccessfully. It was stoutly built and the lock was a good one. Realizing that his efforts were unavailing, he desisted and turned his attention to discovering other means of escape. But the building being without windows, light and air entering through two small openings near the roof only, Bob reluctantly concluded that rescue must come from the outside. So, to attract attention, he pounded vigorously on the door and called lustily, but, receiving no response, his outraged feelings found expression in a

"Well, I'll be jiggered! What do you know about this, you yellow bandit? Nice pickle you have gotten me into."

Bob would have felt even worse if he could have known what was happening on the outside.

For at that moment a Weary Willie came ambling down the alley to where Bob had left his shoes and catfishing outfit. Said Willie had traveled far that day and his footgear was in a state of disrepair that may be aptly described as being most "holey."

Imagine,—then, the tramp's delight at perceiving a pair of perfectly good tan shoes by the roadside with nobody in them.

"Fer the love of Mike, wot goodhearted guy donated these here 'kicks' to a poor bloke as hasn't done nothin' to deserve 'em. Seems to have been fishin', he does. Here's luck to him anyhow."

Thus communing, the hobo quickly replaced his soleless brogans with Bob's well-made shoes and promptly took his departure, leaving in exchange the shapeless remnants he had just discarded.

In the meantime daylight was quickly fading and Bob again endeavored to make himself heard. This he did at intervals of several minutes, but he eventually concluded that his efforts were simply wasted energy, and, as darkness came, proceeded to make himself as comfortable as circumstances would permit. This was accomplished by arranging some sacks of grain to form a couch and placing another sack to serve as a pillow. Then, as the night was cool, he piled more sacks around his bed, and, removing his coat, snuggled between the sacks, with the garment as a covering.

The yellow Persian had viewed these preparations with approval and, on their completion, scrambled purringly down and insisted on sharing the couch.

"Well, old cat," said Bob, "this sure is a go. If we just had something to eat and a long drink of water, we wouldn't be so badly fixed. As we haven't, we will just have to go to sleep and forget about hunger."

(Continued next week.)

IDEAS FOR THE COOK

Written for the California Cultivator
By Isabel Cottle.

Breakfast.

Stewed Crabapples
Oatmeal
Jelly Omelet
Muffins
Coffee

Lunch or Supper

French Stew
Corn Muffins
Creamed String Beans
Spiced Pears
Cookies
Tea

Dinner

Roast Lamb, Mint Sauce
New Potatoes in Cream
Baked Tomatoes
Apricot Sherbet
Sponge Drops
Coffee

Jelly Omelet

Beat four eggs separately. Add to well beaten yolks four tablespoons of milk, pepper and salt to taste, and lastly the well beaten whites. Into a hot pan put a generous lump of butter. When melted pour in the omelet mixture. As the eggs begin to whiten draw up carefully from the bottom with a spoon, letting the raw part run out until all is equally cooked. Just before folding spread with jelly. Turn on to a hot platter and dust with powdered sugar.

French Stew

Place a piece of suet in bottom of kettle and try out. When hot and well melted put in a piece of beef weighing four or five pounds and turn until nicely browned on all sides. Add a few sliced carrots, one or two sliced onions and one cup of hot water. Allow to cook slowly for several hours, or until the meat is thoroughly tender. It may be necessary to add a small quantity of hot water from time to time, especially if gravy is desired. Thicken slightly and serve.

Baked Tomatoes

Peel and slice tomatoes a quarter of an inch thick. Place in layers in a pudding dish, season with salt and pepper and a very little sugar. Cover and bake half an hour. Fifteen minutes before serving remove the lid and allow to brown. Just before taking from the oven pour over the top two or three tablespoons of cream and melted butter.

Sponge Drops

Beat to a froth three eggs and one cup of sugar. Stir into this one heaping coffee cup of flour in which one teaspoon of cream of tarter and half a teaspoon of soda are well mixed. Flavor with lemon. Drop on buttered pans in teaspoonfuls about three inches apart.

Blessed indeed are the mothers who have a goodly supply of gumption—that is, those qualities which make strength of character, which give the power to see and do aright. The word "gumption" is strictly Hoosier and they say "Gumption is the ability to put the grease where the squeak is." May the mothers of our land leave no stone unturned until they realize fully just what and where the squeak is in their household, and then apply the grease with such a liberal hand, that all our boys and girls will soon have such well developed bumps of gumption they will be ever ready to lend a hand to help.

There are souls in the world who have the gift of finding joy everywhere, and of leaving it behind them when they go. Their influence is an inevitable gladdening of the heart. It seems as if a shadow of God's own gift had passed upon them. They give light without meaning to shine. These bright hearts have a great work to do for God.—Faber.

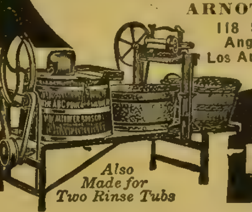
Dividend Notice

THE GERMAN SAVINGS AND LOAN SOCIETY

526 California St., San Francisco

For the half year ending June 30, 1914, a dividend has been declared at the rate of four (4) per cent per annum on all deposits, payable on and after Wednesday, July 1, 1914. Dividends not called for are added to the deposit account and earn dividends from July 1, 1914. Adv.

GEORGE TOURNY, Manager.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ARNOTT & CO.
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Also Made for Two Rinse Tubs

Kellogg's Ant Paste Makes Ants Disappear

"Kellogg's Ant Paste Co.:

"I never saw anything so effective as KELLOGG'S ANT PASTE. There was not an ant left in the house to tell the tale. I am very thankful and have told all my neighbors."

Thousands of similar testimonials have been received.

Demand Kellogg's, "The Jar With the Rattle Cap." For sale at all Grocers and Druggists.

DAISY FLY KILLER placed anywhere, attracts and kills all flies. Neat, clean, ornamental, convenient, cheap. Lasts all season. Made of metal, can't spill or tip over; will not soil or injure anything. Guaranteed effective. Sold by dealers, or 6 sent by express prepaid for $1.

HAROLD SOMERS, 150 DeKalb Ave., Brooklyn, N. Y.

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Bakes
Broils
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A good oil stove does all that a wood or coal stove will do —and does it quicker and easier. There is no wood, coal or ashes to lug.

That means light work and a clean kitchen. The

New Perfection OIL COOK STOVE

burns kerosene, the clean, cheap fuel. It is scientifically constructed. The chimneys direct a concentrated heat just under the cooking utensils. And the heat can be regulated—just like a gas range. The New Perfection is an ideal stove for home, camp or bungalow. It doesn't overheat the kitchen; doesn't smoke; doesn't taint the food. Ask to see it at your dealer's.

Standard Oil Company
(California)

San Francisco--Los Angeles Produce Markets

Los Angeles Market

LOS ANGELES, July 8, 1914.

BUTTER

Butter receipts are slightly in excess of 50,000 lbs. daily; quotations still as for weeks. Good demand for best grades.

Prices to trade 4 cents above following quotations:

Creamery Extras	.25
Firsts	.22@23
Country	.20
Ladle	.19

CHEESE

Prices to trade 1 and 2 cents higher:

Eastern Daisy	.18½@19
California Fresh	.14@14½
Domestic Swiss	.21
Longhorn	.19@19½
Imported Swiss	.24@26
Oregon	.17½@18
Cheddars	.19

EGGS AND POULTRY

Two cars eggs arrived from north yesterday. Locals coming at rate of 500 cases daily. Quotations a shade higher.

Prices to trade 3 cents higher than following quotations:

Fresh ranch, case counts	.26
Candled	.29
Northern Case Count	.24½
Petaluma-Santa Rosa	.26
Price to producer:	
Hens, lb.	.14@18
Roosters	.7@8
Broilers	.15
Fryers	.18
Roasters	.19@20
Turkeys	.22@27
Ducks	.14
Geese	.14
Squabs, doz.	2.50

LIVE STOCK

The following quotations are f. o. b. Los Angeles on all stock:

Hogs, 175 to 200 lbs., per cwt.	9.00
Prime Steers	.7½
Heifers	.6¼
Calves, lb.	.8½
Sheep—	
Ewes, head	4.00
Wethers	4.25@5.00
Lambs, head	4.00

POTATOES

Wholesale selling price:

Old	1.40@1.50
Sweets, lug	.60@80
News, cwt.	.150@1.60
Northern Burbanks, cwt.	1.50@1.60

ONIONS

Wholesale selling price:

Stockton Red, sack	2.40@2.50
Red, cwt.	2.75
Silver Skins, lug	.65@75
Yellow Danvers, sack	2.50@2.65
Garlic	.12@15

VEGETABLES

Wholesale selling price:

Asparagus, lb.	.7@8
Artichokes, Northern, doz.	.75@90
Beets, dozen	.20@25
Beans, String	.4@6
Cabbage	.75@90
Carrots, doz.	.20@25
Cauliflower, doz.	1.00@1.15
Celery, doz.	1.15
Corn, Green lug	.50@75
Cucumbers, doz.	.40@50
Egg Plant	.7@9
Escarole, doz.	.40
Horseradish, doz.	.10@12
Leeks, doz.	.35@40
Lettuce, crate	.65@80
Mint, doz.	.25@40
Okra, lb.	.7@9
Onions, Green, doz. bunches	.15@20
Parsnips	.25@30
Peas, lb.	.4@6
Oyster Plant	.25@30
Peppers	.8@9
Chili, lb.	.8@9
Radish	.15@20
Rhubarb—	
Crimson Winter	.75@80
Spinach, doz.	.20@25
Squash—	
Cream	.40
Summer, crate	.35
Crookneck	.25@35
Turnips	.25@30
Tomatoes, lug	.40@75

FRESH FRUIT

Wholesale selling price:

Apples, new, lug	1.00@1.15
Apricots, lug	.50@75
Berries—	
Strawberries, basket	.3@4
Raspberries	.4@5
Blackberries	.3@5
Loganberries	.5@6
Grapes—	
Malagas, crate	1.75@1.85
Thompson Seedless, crates	1.35@1.50
Gooseberries, lb.	.9@11
Bananas	.3½@4
Cherries—	
Red, lb.	.9@10
White, lb.	.8@10
Cantaloupes, crate—	
Ponies	1.15@1.25
Standard	1.50@1.65
Jumbos	1.80@2.00
Figs, 1-layer box	.75@90
Nectarines, lug	1.35@1.60
Pineapples, lb.	.5@7
Pears, Bartlett, lug	1.60@1.75
Peaches, lug	.65@85
Plums, lug	.75@1.25
Watermelons, lb.	¾@1¼

CITRUS FRUIT

Wholesale selling price:

Lemons	4.00@5.75
Grapefruit, Seedless	2.25
Valencias	1.65@2.45
Limes, crate	1.25

DRIED FRUITS

Wholesale prices to retailers are:

Evaporated Apples, Fcy., lb. bxs	.10@12
Apricots	.15@18½
Peaches	.6½@7½
Pears	.8@12
Nectarines	.12½
Prunes	.6@16½
Plums	.10

NUTS

Prices named by California Walnut Growers' Association are:

No. 1	.17½
Budded Walnuts	.21
No. 1 Soft Shell Walnuts	.16
No. 1 Hard Shell Walnuts	.15½
No. Twos	.11½

Wholesale price:

Almonds—	
I X L	.22@23
N P U	.20@21
Drakes, Thin Shells	.18@19
Pecans	.18
Peanuts—	
California, Raw	.5½@6
Japan	.6@6½
Eastern	.7
Pine Nuts	.15@16
Rice Corn	5.00@5.25

HONEY

Wholesale selling price:

Comb, Fancy, Water White	.15
White	.13
Light Amber	.11@12
Extr. Water White	.8
White	.7½
Light Amber	.7
Beeswax	.35

BEANS

Wholesale selling price:

Producer's price not far from one dollar under these quotations:

Limas	7.35@7.50
Lady Washington	4.60@4.75
Black Eyes	7.50
Pinks	4.65@5.85
Lentils	6.00@6.25
Small White	5.00@6.00
Garbanzos	8.00@8.50

RICE

California	3.50@4.75
Broken	3.00@3.75

HAY

Buying prices f. o. b. cars Los Angeles:

Barley	10.00@11.00
Wheat Hay	10.00@11.00
Tame Oat	11.00@13.00
Alfalfa	9.00@11.00

GRAIN

Wholesale selling prices f. o. b. Los Angeles:

Wheat	1.85
Corn	2.15
Oats, Red	2.35
Oats, White	1.60
Kaffir Corn	1.90
Millet	3.75
Popcorn	4.75@5.00
Egyptian Corn	2.20
Barley Seed	1.45
Milo Maize	2.00
Cal. Seed Oats	2.25
Sunflower Seed	5.25@5.35

FEED STUFF

Wholesale selling prices f. o. b. Los Angeles:

Bran, Heavy	1.70
Alfalfa Meal	1.05
Alfalfa Syrup, per cwt.	1.05
Beef Scraps	3.00@3.10
Beet Pulp	1.25
Cracked Corn	2.20
Feed Meal, cwt.	2.25
Cotton Seed Meal	1.85
Blood Meal	3.60@3.70
Bone Meal	2.00@2.10
Charcoal	1.90@2.00
Bone Green	1.95@2.05
Cracked Wheat	2.00
Oil Cake Meal	2.05
Fish Meal	3.15@3.25
Rolled Oats	1.65
Rolled Barley	1.20
Middlings	1.95

San Francisco Market

SAN FRANCISCO, July 7, 1914.

BUTTER

Butter advanced slightly on Friday and still holds its advance. Arrivals are liberal, but market is keen and all good stock is quickly cleaned up. Arrivals yesterday, 110,000 lbs.

Extras	.24½
Prime Firsts	.23
Firsts	.23

CHEESE

California Y, American	.14@14½
California Flats	.10@12½
Oregon Twins	.15½
Oregon Y. America	.14½@15
Cheddar	.20

EGGS AND POULTRY

Arrivals of eggs are almost 3000 cases daily. A steamer came in from north on Monday with 500 cases of Chinese eggs. Only slight effect was noticed on market.

Extras	.25
Select Pullets	.22
Hens	.17@18
Fryers	.25@30
Roosters, old	.12@13
Roosters, young	.24@26
Broilers	.18@26
Ducks, doz.	6.00
Squabs	1.50@2.00
Belgian Hares, lb.	.13@14

LIVE STOCK

San Francisco prices, gross weight:

Steers	.4@7¼
Cows and Heifers	.3@6¼
Calves, lb., live weight	.7@9
Hogs	.7¾@8¾
Wethers	.5½@5¾
Ewes	.4¼@5
Milk Lambs	.6½@7½

POTATOES

Delta Burbanks	1.00@1.50
Oregon Burbanks	.75@1.25
Washington	.60@70
New Potatoes, lb.	.1¼@1¾
Garnets	.1½@2
Sweets, cwt.	2.50@2.75

ONIONS

Bermudas, crate	2.00@2.25
New Reds, cwt.	2.00@2.25
Garlic, New	.5@8

VEGETABLES

Wholesale selling price:

Asparagus, box	1.00@1.25
Beans—	
Limas, lb.	.5@6
Wax, lb.	.1@3
Strings	.1@3
Cabbage, cwt.	1.00@1.25
Carrots, sack	.35@50
Cauliflower, doz.	.40@70
Corn, Green, sack	.75@1.50
Alameda	.75@1.25
Cucumbers—	
Deltas, lugs	.75@1.00
Egg plant, lb.	.6@7
Peas, lb.	.2@3
Peppers—	
Bell, lug	.75@85
Chili, lug	1.00@1.25
Rhubarb, box	.60@1.00
Tomatoes—	
Southern, crate	.25@40

FRESH FRUIT

Apples—	
Alexander	.50@1.10
Red Astrachan, box	.50@90
White Astrachan	.50@1.00
Gravensteins	.50@1.50
Apricots, crate	.50@75
Small, lugs	.75@1.25
Canners, ton, Yellow	25.00@30.00
Blackberries, chest	2.50@3.00
Bananas, Hawaiian, bunch	1.00@1.50
Cantaloupes, crate	1.25@1.50
Ponies	1.00@1.25
Orange Pack	1.00@1.25
Jumbos	1.50@2.00
Figs—	
Black, box, single layer	1.00@1.25
White, box, single layer	.75@1.00
Grapes, lug	1.25@1.50
Gooseberries, lb.	.6
Loganberries—	
Red, chest	4.00@5.00
Black	2.00@3.00
Loquats, crate	.75@1.25
Peaches, crate	.60@75
Basket	.40@75
Lugs	1.00@1.40
Plums, crate	.40@65
Pears, box	.50@75
Prunes, crate	.40@65
Pineapples, Hawaiian	1.50@2.25
Strawberries	2.00@3.50
Raspberries	3.50@5.00
Watermelons	.1½@2¼

CITRUS FRUIT

Grapefruit, Seedless	1.50@2.50
Lemons	2.75@5.50
Lemonettes	2.50@3.00
Limes, cs.	4.00@6.00
Tangerines	.75@1.25
Valencias	1.75@2.50
Mediterranean Sweets	1.00@1.50

DRIED FRUITS

Wholesale prices are:

Prunes—1913 crop, bulk basis: 30s-40s, 7½c, 40-50s, 7½c; 50-60s, 7 1-2c; 60-70s, 7½c; 70-80s, 7c; 80-90s, 5¾c; 90-100s, 5½c. The above are for both Santa Clara and outside; 1912 crop worth practically as much as the new crop; 20-30s, 15c in 25-lb. boxes.

Other Fruits. 50-lb. Boxes—	Standard	Ch.	Extra Ch.	Fcy.
Evap. Apples	....	10	10½c	11½c
Peaches	4¾c	5 c	5⅝c	5¾c
Pears	8½c	9 c	10 c	.....

RAISINS

The following prices are f. o. b. Fresno, as given out by the Associated Raisin Company, and are effective on all sales until August 1, 1914. 1912 crop practically the same figures as the new crop. 1913 crop, per lb., effective at once: Loose Muscatels (50s), 1-crown, 4¾c; 2-crown, 5½c; 3-crown, 6c; 4-crown, 6c; Seeded, fancy, 16-oz. pkgs., 7½c; do, 12-oz., 6c; do, bulk, 6¾c; do, choice, 16-oz., 7c, do, 12-oz., 5¾c; do, bulk, 6½c; Sultanas, no stock; Thompson Seedless, unbleached, 50s, 6c; 16-oz., 7⅛c; 12-oz., 5&c; recleaned, ¼c advance; do, floated, ½c advance; London Layers, no stock. Local representatives of the Association are asking ¼c higher, while several of the large packers are quoting ⅛c under the Association's figures.

The California Associated Raisin company has issued a price list dated May 28th, on the 1914 crop.

3 Crown London Layers, 20 lb. box, $1.15. 4 Crown Cluster, $1.40. 5 Crown Dehesa Clusters, $2.00. 6 Crown Imperial Clusters, $2.50. 5-lb. boxes, 50c extra; 10-lb. boxes, 25c additional. Fancy Clusters, 1-lb. cartons, 20 to the box, $1.65. Fancy Clusters, 2-lb. cartons, 12 to the box, $2. Fancy Clusters, 5-lb. cardboard cartons, 4 to the box, $2.25. Bulk Layers in 50-lb. cases, $2.50. All prices guaranteed against decline to January 1, 1915, and subject to advance without notice."

NUTS

Peanuts—	
Unpolished	.5½@6
Polished	.6@6½
Japanese, Shelled	.6¼@6¾
Italian Chestnuts	.6½@7

BEANS

Wholesale selling price:

Limas	6.75@6.85
Pink	4.10@4.20
Black Eyes	7.00@7.25
Cranberry	5.75@6.00
Small White	4.75@5.80
Garbanzos	6.50@7.50
Large White	4.10@4.25
Bayou	6.50@7.00
Manchurian Cranberries	3.75@3.90
Manchurian Butters	4.60@4.80
Manchurian Speckled Bayous	3.75@4.00
Red Mexican	6.00@6.50
Horse Beans	2.00@2.25

HONEY

1913

Comb, Water White	.14@15
Amber	.12@15
Dark	.3½@4
Extracted White	.7½@8
Light Amber	.6½
Dark	.10@11
Beeswax	.27@32½

HOPS

1913

Sacramento Valley	.15@16
Sonoma-Mendocino	.17@17½
Oregon Clusters	.16@17
1914 Contracts	.14@15½

HAY

Under date of July 3, Scott, Magner & Miller say:

Receipts of hay for the past week were 2,906 tons; last week, 1,996 tons. The majority of this consisted of new crop of poor to medium quality, practically no fancy hay having arrived. The market remains quiet. Receipts of alfalfa have been limited, but there is practically no demand whatever at present, feed being abundant in most all districts. Straw is in light supply as well as demand.

Fancy Wheat Hay, lt. bales	11.00@12.00
No. 1 Wheat or Wheat and Oat	9.00@10.00
No. 2 Wheat or Wheat and Oat	7.00@8.50
Choice Tame Oat	10.00@11.00
Other Tame Oat	7.00@9.00
Barley	6.00@8.00
Wild Oat	6.00@8.00
Alfalfa	6.00@9.0
Stock Hay	5.00@6.0
Straw, new	.40@5

GRAIN

Wheat, Cal. Club	1.57½
Corn, Eastern Yellow, blk.	1.73¾@1.7
Egyptian, White Corn	1.70@1.72½
Barley, Feed	.92½@97½
Oats, white	1.27½@1.3
Oats, red	1.00@1.1
Millet	.2¼@2
Flaxseed, lb.	.4@4
Mustard, Brown	.4@4

WEATHER CONDITIONS

From July 1 to July 4, 1914

Report from the various stations of the U. S. Weather Bureau, by Geo. H. Wilson, director, San Francisco.

	Rainfall Data.			Temperature Data.	
	Past Week.	Seasonal to Date.	Normal to Date.	Maximum.	Minimum.
Eureka	.01	.01	.03	56	50
Red Bluff	....	....	....	104	60
Sacramento	....	....	....	102	54
San Francisco	T	T	....	74	48
San Jose	....	....	....	94	52
Fresno	....	....	....	106	60
Independence	....	....	....	100	60
San Luis Obispo	....	....	.01	86	50
Los Angeles	....	....	....	88	56
San Diego	....	....	....	78	60

T means trace.

Rye	1.60@1.70
Sunflower	4@4½
Vetch Seed	3@3½

FEED STUFF

Alfalfa Meal, car lots	11.50@12.50
Bran, ton	25.00@26.00
Feed Cornmeal, ton	41.00@41.50
Cracked Corn	41.00@41.50
Rolled Barley, ton	21.50@22.00
Rolled Oats, ton	37.00@37.50
Middlings	32.00@33.00
Shorts	26.50@27.50
Oilcake Meal	33.00@34.50
Cocoanut Meal	25.00@26.00
Linseed Oilcake Meal	27.00@28.00

Citrus Fruit Market

LOS ANGELES, July 8, 1914.

Fortunately the orange market is looking somewhat better than a week ago. The Fourth of July trade cleaned up the market of practically all offerings. Navels are all out of the way and but very few sweets yet to go. With reasonable care in distributing the shipments from this time on Valencias will be cleaned up at fair prices.

The lemon market is in the dumps again, partly because of abnormal shipments from the Medterranean. There are afloat today over a half million boxes of lemons coming to the United States. When it is considered this is almost as large as the entire year's output of California lemons it may be seen that some time will be required to absorb this enormous quantity. Besides this immense importation 50 degree weather is prevailing in many centers. The only consolation is that California's supply at this time is somewhat short.

Shipments.

Shipments of oranges from Southern California to date since November 1, 1913: 31,315 cars; lemons, 2,221; total, 33,536. To same date last season: oranges, 11,912 cars; lemons, 1,787; total, 13,699. Total of all citrus fruits two years ago this date, 30,120. Tulare County shipments to this date: oranges, 5,872 cars; lemons, 30; total, 5,902. To same date last season: oranges, 1,855 cars; lemons, 107; total, 1,962.

NEW YORK, July 6.—Seventeen cars Valencias, three sweets, one St. Michaels, one seedlings, three mixed, one lemons sold. Market firm, fully 25 cents higher. Cloudy.

VALENCIAS—	Avge.
Old Mission, xf., Chapman	$3.65
Old Mission, fy., Chapman	3.05
Golden Eagle, sd., Chapman	2.60
SWEETS—	
Jameson	$2.30
Justrite	1.95
Victor	2.85

CINCINNATI, July 6.—Warm. Market steady on oranges and lemons. Sold six cars oranges, two cars lemons.

VALENCIAS—	Avge.
Red Label, C.C. Lindsay	$2.00
Happy Boy, C.C. Lindsay	1.65
Red Ridinghood, S.D. C. Oak	2.40
Airship, FG.C. Fillmore	2.30
Oroile, F.C. Fillmore	1.95

PHILADELPHIA, July 6.—Nine cars sold. Warm, cloudy. Two cars Florida oranges sold, $1.15 to $3.20.

VALENCIAS—	Avge.
Hetch Hetchy, C.C. Lindsay	$2.30
Echo, S.T. Pasadena	3.00
Arroyo, S.T. Pasadena	2.60
Golden Orange, A.H. Prenda	2.50

ST. LOUIS, July 6.—Clear and warm. Market strong on Valencias, easier on lemons. Four cars oranges, three cars lemons sold.

VALENCIAS—	Avge.
Martha Washington, Or. Ex	$3.05
Cowboy, Or. Ex. Tustin	2.80
Martha Washington, Or. Tustin	3.15
Camellia, Red, M.O.A.	3.20
Blossom, Red. M.O.A.	2.70
Brownie, Rialto Ft. Co.	3.00
Boy	2.95

CLEVELAND, July 6.—Five cars Valencias, one mixed car, two cars lemons sold. Market advancing on oranges, firm on good stock lemons. Cool, clear.

VALENCIAS—	Avge.
Colombo, S.T. Placentia	$2.65
Las Lalmas, S.T. Placentia	2.45

PITTSBURGH, July 6.—Six cars oranges, one car lemons sold. Market is steady.

VALENCIAS—	Avge.
Golden Orchard, Ind. Ft. Co.	$2.70
Freedom, Ind. Ft. Co.	2.35
Gabriella, Ind. Ft. Co.	2.55

CHICAGO, July 6.—New apples, 50@1.00 per box. Lemons, California, new, 5.00@6.00 per box. Oranges, 2.00@3.00. Pineapples, per crate, 2.25@.75. Peaches, 75@2.75 per case. California cherries, per eight-pound box, 5@1.60. Apricots, per box, 75@1.25. Peaches, 90@1.25. Plums, 60@1.40 per crate. Cantaloupes, 1.00@1.75 per standard crate. Watermelons, 175.00@60.00 per car. Blackberries, 1.75@2.25 per twenty-four-quart case. Red raspberries, 1.75@2.25 per twenty-four-quart cases. Black caps, 1.25@1.50 per twenty-four pints. Gooseberries, 50@.10 per sixteen-quart cases. Blueberries, 2.50@3.00 per sixteen-quart case.

BOSTON, July 6.—Nineteen cars oranges sold. Cool, cloudy. Market strong and higher.

VALENCIAS—	Avge.
Forget-met-not, T.C. Ponca	$2.65
Red and Blue Label, C.C. Lindsay	2.85

Veterinary

Sore Shoulders

I have a horse with sore shoulders that I cannot heal. Her side became chafed and runs matter. She continually gnaws her side unless tied in a narrow stall, and this spreads the disease to her mouth and eyes. She eats heartily and is in good flesh. What treatment is necessary?—Subscriber, Lindsay.

For the sore shoulders apply the following lotion: Chloride of zinc, one dram, and water, one pint. Wash the parts clean and when dry apply the lotion. It will need this treatment once a day for several days. Be careful and do not get the lotion into the eyes. It will not injure them, but will smart for a time.

Barb Wire Cut

Horse has a badly swollen hind leg caused by a barbed wire cut which exposed the bone. This filled in after a couple of months. She has pretty good use of her leg, but I cannot heal the wound nor reduce the swelling.—Subscriber, Lindsay.

To heal the leg get an ounce of nitric acid and with a small swab apply some of it to the raw surface. This will form a scab and when it comes off apply the acid again. Repeat this until three or four scabs are formed, when it will probably take care of itself. Each time before applying the acid grease the parts below so the acid will not run down and get on the skin. The swelling will go away gradually when you commence using her.

Lice

A 20-year-old horse, in good condition otherwise, has been troubled with itch on the neck near the mane and around the ears for the past six months. It does not act like mange. The hair is rubbed off from about a dozen patches from one to two inches square in size and the skin feels thicker there than the rest. The constant rubbing is making some raw sores. It was called eczema by a veterinary surgeon and several others, but the remedies seem to afford no relief. I have applied several remedies, including carbolic acid solution, liver of sulphur and resinol ointment with little or no results.—Subscriber, San Jose.

Try the following and let us know if it does the work: Get a quart of sheep dip and put half a teacup of it in a gallon of warm water and soak the parts well with it. Repeat this treatment every three or four days until about four applications have been made, then use a light grade of engine oil and rub in plenty of it over the affected parts. Trouble of this kind is caused by a very small louse. The large blue louse comes from the hen roosts, but the small white ones come from some other source. They burrow around the roots of the hair and cause a great deal of irritation. The above remedies will end the trouble if thoroughly applied.

Sick Sow

I have a sow eight months old which for the last two months has had no use of her hind parts, but drags them on the ground. Have given her copperas and sulphur and bathed her hips with turpentine, but she gets no better.—Subscriber, Indio.

Get the following from your druggist: Tincture of nux vomica, two ounces; tincture of juniper, four ounces; salicylate of soda, half an ounce; acetate of potash, one ounce, and enough water to make one pint. Mix and give a tablespoon twice a day.—Dr. Wm. Petrie.

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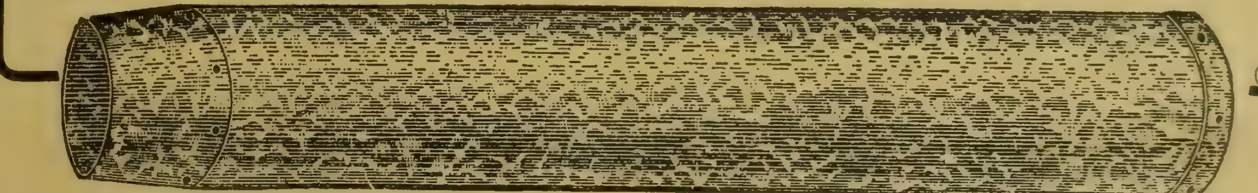

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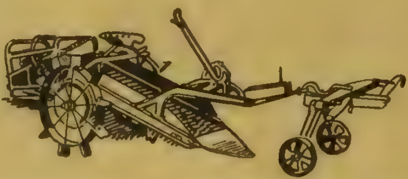

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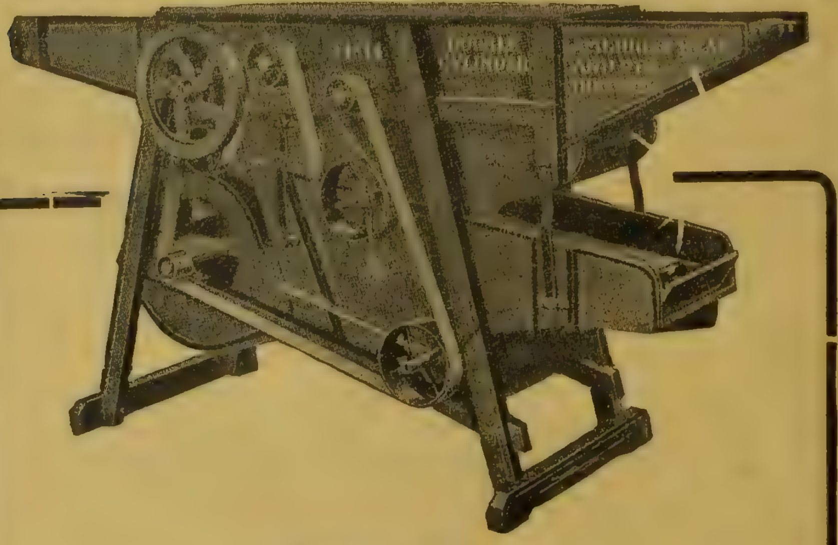

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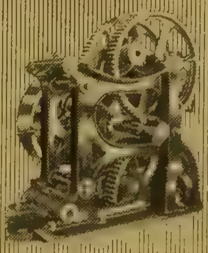

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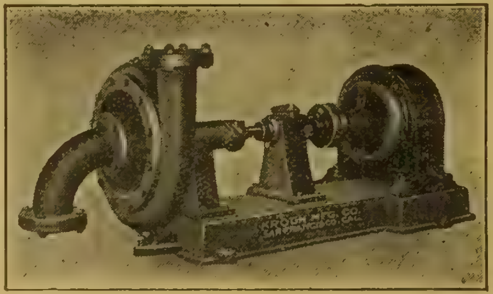

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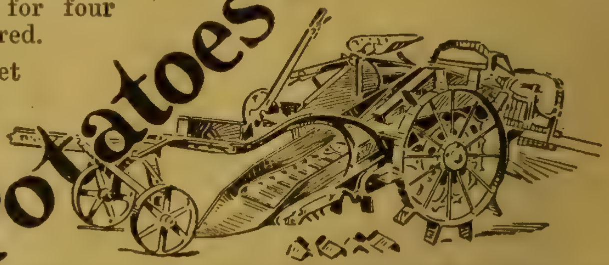

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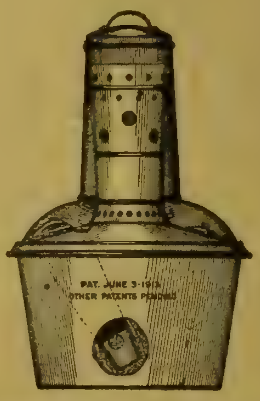

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Vol. XLIII No. 3 LOS ANGELES: THURSDAY, JULY 16, 1914 One Dollar Yearly

Practical Milk Houses

Notes and Photographs Taken by Dr. Leroy Anderson Give Fund of Information as to Satisfactory California Milk Houses and Their Equipment

The dairy law of 1911 says definitely that a dairy shall be deemed unsanitary "if a suitable milk house or room is not provided and maintained, properly screened to exclude flies and insects. Said milk house or room shall not be located in or be a part of any residence or dwelling house, or any barn or poultry house, and shall not be used for any other purpose whatsoever." The milk house must be separated by a distance of at least 100 feet from any pig pen, horse stable or manure pile, or any other place from which foul odors may arise. This is the state regulation, and its enforcement is in the hands of the state dairy bureau. City boards of health, as, for instance, Los Angeles and San Francisco, have special regulations governing dairies which supply them with milk, and under these the city dairy inspectors may visit any dairy in the state which ships milk or cream to that city. Thus the dairyman must watch out for both city and state inspectors, but in regard to milk houses, the rules do not materially differ.

It is pleasing to note the increased attention that is being paid to the care of milk and cream through the milk room. Every new dairy being established erects a milk house as soon as possible. The dairyman who sells cream usually calls it his separator house, but the use and intent is the same in any case. It is a place to take the milk immediately from the milking barn for cooling or for separating and a place where only milk and milk utensils are kept. It must have a concrete floor well drained and be on a concrete foundation. A very suitable milk room is the tank house. One of the best milk rooms I have seen is on a Stanislaus dairy and is the ground floor of a tank house, the first story of which is entirely of concrete. This makes a cooler room and affords sanitary walls as well as floor.

The illustrations in Fig. 1 is a view or a new milk house on a Yolo county dairy of 20 cows. The house is 8x10 feet on the ground and 8 feet high at the plate. It has two windows, each 30x33 inches, well screened, and one door. The door is not yet provided with a screen. The structure is 2x4 inch studding about 16 inches on centers, covered with 8-inch rustic siding, and the roof is shingled. The inside is rough, but for best sanitation should be ceiled and painted. The drainage is directly through a pipe into the irrigation ditch close by. The house has a concrete foundation and floor and cost $50, which included everything except a day's help the owner gave the builder in making the concrete floor. The cart in front is used to wheel the milk in 10-gallon cans from the dairy, a necessary and handy thing in saving time and strength. This dairyman sells cream for buttermaking.

(Continued on Page 62)

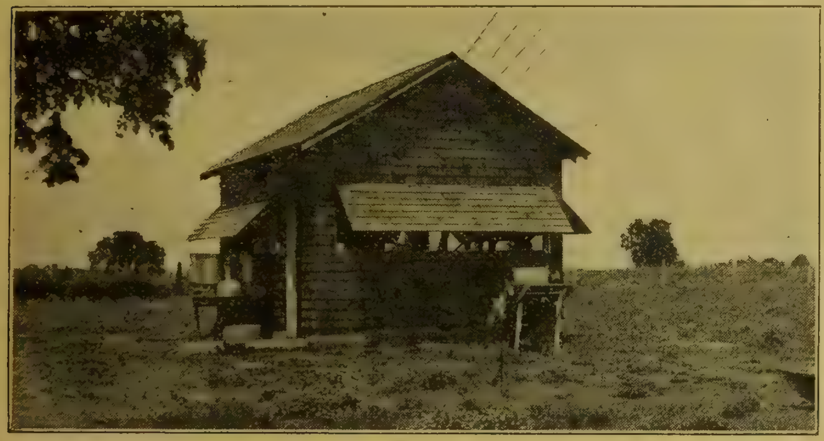


Fig. 3

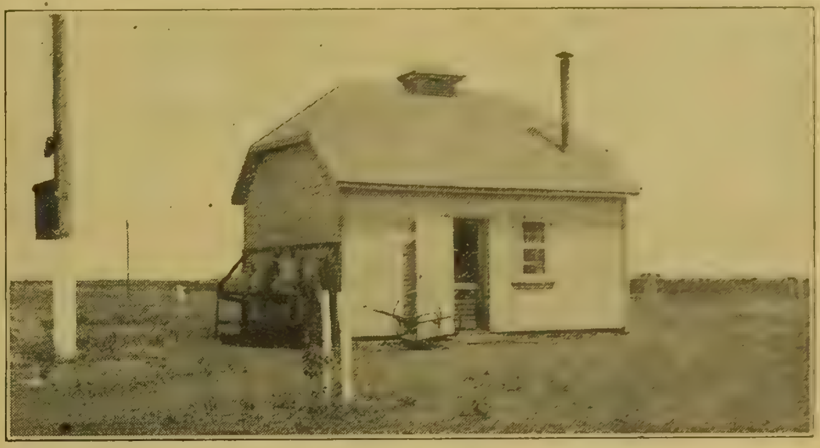


Fig. 4

Fig Culture in California

Status, Possibilities and Methods Described by Geo. C. Roeding in an Address Before State Fruit Growers Convention at Davis

To produce an article of food of recognized value is a source of satisfaction, but there must be another incentive, the industry must be profitable. This is the determining factor which means the continuance or the relinquishment of any business enterprise, whether it be fruit growing or any other occupation.

Does fig growing in California pay? True, we must compete with the cheap labor of Europe, but we have done this successfully in other branches of fruit growing, and the very fact that the harvesting of a fig crop can be carried on to better advantage by child labor than any other is an additional incentive to engage in the industry. Conceding that our wages are higher, it must be remembered that our help is more efficient, and this combined with our better methods of handling, places us in the position to compete in figs as well as in other fruits.

It has been demonstrated that White Adriatic figs at three cents a pound are more profitable than raisins at five cents. Smyrna figs can be raised fully as cheap as the ordinary varieties, the only additional expense being caprification, but as this does not cost over two cents a tree at the very outside, it is a matter not worthy of consideration. It is safe to assume that Smyrna figs, even when produced in large quantities, will never bring less than three cents per pound, and for many years to come five cents and over will be the prevailing price. No class of dried fruit outside of the fig possesses so many dietetic qualities, and with a good article of food like the fig there is an unlimited field for expansion. The dried figs which were being marketed from this state prior to the successful establishment of the Smyrna fig industry precluded any great expansion due to the inferiority of our figs as compared with the imported article. Experience has demonstrated that there is only one variety of Smyrna figs of any value for drying purposes, and this has been designated as the "Calimyrna." This is identical with the variety grown in Smyrna under the name of Lop Injir," which is the only fig used for export. The name "Calimyrna" is a copyrighted word, and is a contraction of the two words "California" and "Smyrna." The Calimyrna is recognized in the trade as the only fig grown in California worthy of being classed as a competitor of the imported Smyrna fig of commerce.

In order to assure others who may desire to market this fig under their own brand I wish to go on record now as encouraging the use of this name on all packs of genuine Smyrna figs grown in California. Although having the exclusive right to reserve this name for my own pack, I have never objected to its use by other packers, but have, on the contrary, encouraged it in all instances where the figs to be marketed were the Calimyrna.

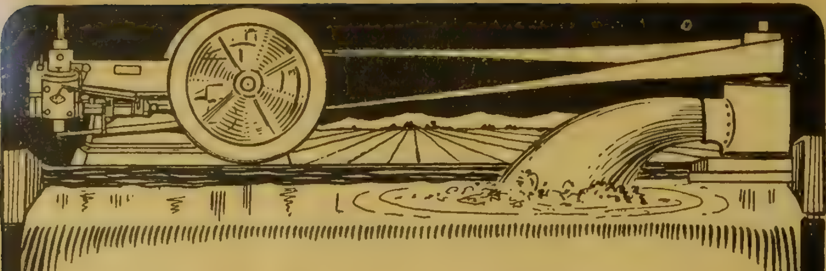
There are thousands of acres of land in California in the interior valleys in which the fig can be grown successfully and profitably. The requisites for making commercial fig culture a success are a summer temperature ranging from 90 degrees to 110 degrees in the shade from July to October with an entire absence of rain and comparatively dry atmosphere.

This does not necessarily mean that figs cannot be grown elsewhere, but rather that where conditions such as these prevail every branch of the industry is open to exploitation, from the shipping of fresh figs to the canning and preserving and finally to the drying, which is after all the only absolute and dependable method for the disposal of this crop, for the grower then has the proposition under his complete control. Figs have been marketed in this manner for hundreds of years, and although we do not wish to minimize by any manner of means the canning, preserving and crystallizing of figs, in its last analysis all of these processes will only take care of a very small part of the crop, when it takes its place as one of the great fruit industries of this and other states having climate and soil conditions and possibilities of irrigation similar to our own.

The annual production of Smyrna figs in Asia Minor varies from 25,000 to 30,000 tons, and at least one half of this crop is sold in the United States. The output in the United States, all—or practically all of it—comes from California, and is from 3,000 to 5,000 tons annually.

A failure of a fig crop in California has never been known, and we will venture to say without fear of contradiction that it never will be. Fig buyers are so certain of their annual fig crop that it has been customary for a number of years in Fresno County to make from one to five year contracts with growers for the crops on their avenue trees and for entire orchards, the purchaser paying in advance for the expected crop. The price paid depends largely

(Continued on Page 54)



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Citrus and Tropical Fruits

THE PERUVIAN FRUIT-FLY

By C. H. Townsend, in The Journal of Economic Entomology.

The Peruvian coast region has long been known to be infested with the fruit-fly, a pest which attacks citrus as well as deciduous fruits, particularly during the month of February.

In February, 1912, a guava tree at Sullana in the Chira valley, Peru, was completely infested by Trypetid maggots, and the fly was to be seen among the fruits at the same time. The writer reared numbers of these maggots, and flies were produced from the 4th to the 10th of March. This same tree, having shed all its diseased fruits during February, produced a second crop in March, which contained only one infested fruit containing one small maggot, thus indicating the distinctness of generations.

As the insect does not appear to have been identified before, the writer describes it under the name of Anastrepha peruviana, and mentions the characters which distinguish it from the closely allied species A. fratercula.

As a remedy he recommends spraying the foliage before the fruits begin to ripen, or as soon as the presence of the flies is noted, with the following mixture: lead arsenate, five to 10 pounds; chancaca (brown or black cane sugar in cakes), 25 to 50 pounds, and water, 100 gallons. The chancaca must be dissolved in boiling water before adding to the arsenate solution. Variation in the amount of arsenate added is required for different kinds of foliage, guava and orange standing much more than peach, and the sugar content should vary in the same proportion.

A "TREMENDOUS BOOM" COMING FOR PACIFIC COAST FRUIT

A writer in the New York Times Annalist declares that the opening of the Panama Canal will have much meaning for the Pacific Coast grape business, as well as for the entire fruit industry of that region. Because of the canal it will be possible to ship fresh fruit by water without any rehandling in transit. From California fruit orchards to markets in Europe the distance is 6,000 miles or more, over which no transshipments will then be necesary. Heretofore, one of the chief things that have kept American fruits out of the European markets is the sevenfold handling necessary in sending a box of lemons, oranges, or apples. But when the canal is opened "ships laden with fruit will be able to run from port to port with unbroken cargoes," rehandling being "practically eliminated." It is believed that American fruit will then arrive in London or Paris in better condition than fruit now reaches London and Paris from Spain, Italy, or northern Africa. Hence Pacific Coast growers anticipate a "tremendous boom in their fruit trade oversea." The writer says further on this interesting subject:

"Our exports of oranges, when there is a good crop so there is a surplus over what we eat ourselves, are nearly 1,300,000 boxes, valued at a little more than $3,300,000. We did not export any lemons in 1911, but the year following we shipped abroad 44,366 boxes, and in 1913 we exported 58,428 boxes, valued at $383,083. Of apples, green or ripe, we exported nearly 1,500,000 barrels in 1911. Two years later the number of barrels sent overseas was 1,920,921, and their value $7,417,400. The exports of dried apples in good crop years recently have been worth close to $4,000,000. Of prunes—that great staple dainty of the unwealthy—we are now exporting not far from 100,000,000 pounds a year, an item of more than $5,500,000 annualy. Our total fruit exports, including those shipped in tins, came to nearly $33,000,000 in 1913.

"Years ago the oranges were put in refrigerator cars as soon as they were packed. It was soon seen that this was an expensive way of cooling them, for the fruit when it was placed in the cars was of the temperature of the air—and the orange-picking and shipping season in California comes in hot weather. The cost of refrigeration under these circumstances was excessive. Therefore, great precooling plants were established, buildings where a thousand car-loads of fruit could be brought down to the proper shipping temperature at the least possible expense. Today trains of freight-cars, already iced, are run into these great warehouses and loaded, so that the fruit does not suffer the slightest change in temperature. Some of these precooling plants belong to the railroads handling the fruit; others to the growers' associations.

"It is this incessant care that has made the American orange famous wherever it has been introduced. In England the only complaint has been that the supply was insufficient. There has been no objection to the rather high price—nine to 12 cents each for the California seedless or 'navel' orange."—Literary Digest.

INSECTS INJURIOUS TO OLIVES

By Del Guercio, Giacomo, Florence, Italy.

It is well known that the eggs of the black scale of olives (Saissetia oleae=Lecanium oleae) hatch out in large numbers from the 10th to the 20th of June, and that quantities of larvae are to be found on the leaves and branches. This period is therefore considered to be the most favorable time for the destruction of the insect. However, in 1912, according to the writer's observations in Apulia, hatching of these eggs continued from the beginning of June until the middle of August, or about 65 to 70 days. A fact intimately connected with the preceding is the emission of excremental liquids ejected to considerable distances by the females of Saissetia and of juices caused by the repeated punctures of the insects; the quantities of these are responsible for the appearance and spread of fumagine, as the writer has been able to observe experimentally.

Further, the period of activity of the female scales is in agreement with that of the development of the olive fly (Dacus oleae), which feeds on the sugary secretions of Saissetia and of the no less abundant olive sucker (Euphyllura olivina=Psylla oleae) and infests the olives. The destruction of these insects is therefore necessary on account of the favorable conditions which they produce for the development of Dacus oleae. The appearance and rapid spread of species of Cicada and Cicadetta or Tettigia, which, by the excretion of large quantities of liquid on the surface of the leaves, produce conditions favorable to the development of the olive fly, would necessitate similar measures.

In Italy olives are attacked by the larvae of a Swift moth (Zeuzera pyrina=Z. aesculi.), known locally as "Rodilegno," "Tarlo bianco," "Tarlo giallo," on pears and apples; though very destructive, this has so far been neglected; it attacks a number of trees, including fruit trees, but in Apulia, Calabria, Sicily and Tuscany prefers olives. In Apulia it is only found in large numbers on the most improved varieties (known as "Ogliarole"), whilst the "Olivastro" and the wild olive are almost immune; the same may be said of the Nardo olive, which is also partially resistant to Dacus oleae. In this district the larvae of Zeuzera often attack good-sized branches, provided the bark is still smooth, so that in the hot weather these dry up and drop all their flowers and fruit; many such branches, however, do not die off at once, but remain as centers of infection for several years, producing no fruit. Many laborers in these districts are very skillful in finding the grubs; eight persons may go over 12,000 to 14,000 trees in three weeks, collecting 50,000 to 60,000 grubs, which are paid for at 10 lire (8s, or $2) per thousand.

Observations by various entomologists on pear trees, have shown that the moths lay their eggs during July. The writer has found that in Apulia the larvae hardly begins to pupate before the second half of July, while the majority do not do so till the middle of August. Consequently only the earliest moths appear at the beginning of August, the bulk emerging much later. For this reason collecting of grubs should not begin before August, and should continue till the latest pupae are destroyed.

In the spring of 1912 the olives in the neighborhood of Serranova (Apulia) flowered with extraordinary vigor, many shoots bearing a thousand or more flowers, but only some 30 to 50 set owing to damage by olive suckers (Euphyllura olivina) and Hyponomeutids (Prays oleaellus). On some branches only one of these insects occurred, on others both. The damage extended over a considerable area and amounted to some millions of lire.

In the second half of June quantities of Ageniaspis emerged from the Prays pupae, though many were themselves parasitized by an undetermined microbe within the pupae.

Both in Apulia and in Liguria the writer has observed that the Prays moths fly away from the olives in June and July and seek shelter under the thickest, lowest and most shaded leaves of vines, and to a less extent of pears, plums, cherries and figs. By means of dishes containing poisoned treacle or other liquids, or only water (used in experiments for the control of the olive fly), it was found that the flight takes place principally at the end of June and in the first few days of July. Treacle attracted them more than the other liquids, and water hardly at all. The writer believes that they leave the olives in search of moisture, and in particular of liquids on which they can feed.

With regard to the olive-bark borer (Hylesinus oleiperda), the emergence of the adults seems to take place later than is recorded by Costa, in 1912 it lasted from just before the middle of May to nearly the middle of July; in 1913 it was the same, and the females were found still wandering on the bark as late as July 25.

Experiments showed that this insect will not attack cut twigs, even if they are kept fresh, as those confined with such twigs died without egg-laying; on twigs attached to the tree, egg-laying was more abundant on whole twigs than on those cut back. It is thus evident that healthy trees are liable to attack.

It was previously believed that the olives remaining after the disappearance of the olive suckers were safe, but the writer has observed that they are liable to fall in July if situated near parts of the flowering shoot which have been pierced by the sucker. This explains why flowering shoots with 20 or 30 olives on, but only attacked at the base, sometimes wither up completely. This "running off" of the young olives goes on throughout July, and, according to the writer's 1912 observations, stops when the fruits are nearly as big as peas.

THE BUSINESS OF FARMING

"The Business of Farming," by Wm. C. Smith, published by Stewart and Kidd Company, Cincinnati, two dollars. The Cultivator will be glad to secure the book for its subscribers at the above price, or, including a year's subscription to the Cultivator, at $2.75.

This book, dedicated "to the earnest company of thoughtful humanity-loving men and women who are working with might and main to briug about better methods of farming and farm living, by which the fertility of our soils may be increased and maintained, and that our farms may have better homes and home surroundings," has a world of information for any one who loves the soil. We quote two or three reflections found in the book, which will give an idea of the style of the writer and the interesting and informing things which he says:

"Business is nothing more than being industriously engaged in the affairs of some occupation from which we derive our support.

"Farming is our biggest business. It feeds the nations of the world and is the basis of all prosperity and happiness, and therefore should receive our biggest consideration and be safeguarded by our best brains and legislation.

"In pioneer days when farming implements and machinery were of the crudest kind, requiring muscle to use them, brawn, more than brains, was needed in the business of farming, in order to rescue soils from the wilderness of timber and prairie growth."

The book opens with a historical resume of agriculture, beginning as far back as the time when the command was given, "Let there be light." Several thousands of years are passed over with a sentence or two and, in fact, the historical part of the book is perhaps of lesser importance, though really the most interesting. Following that, other chapters deal with discouragements, worn soils, equipment, preparation, plowing, seed selection, care of machinery, importance of live stock, cost of operation, farm credits, home building and even the country graveyard has a little attention.

VON LIEBIG'S "LAWS OF AGRICULTURE"

To Justus von Liebig, the celebrated German chemist, more than to any other man, belongs the credit for blazing the first trails through the unexplored world of mysteries involved in the transformation of the elements in the soil, water and air into vegetable life.

He formulated the following four "Laws of Agriculture," which stand today as the clearest, most concise statement extant of "the case for the soil:"

First: "A soil can be termed fertile only when it contains all the materials necessary for the nutrition of plants, in the required quantity, in the proper form."

Second: "With every crop a portion of these ingredients is removed. A part of this is again added from the inexhaustible store of the atmosphere; another part, however, is lost forever if not replaced by man."

Third: "The fertility of the soil remains unchanged if all the ingredients of the crop are given back to the soil. Such a restitution is effected by manure or fertilizers."

Fourth: "The manure produced in the course of husbandry is not sufficient to maintain permanently the fertility of a farm; it lacks the constituents which are annually sold off in the shape of grain, hay, milk and live stock."

The almond is being extensively cultivated in Palestine and will soon rank among the important exports of the country. This year's exports amounted to 528,000 pounds, as compared with 317,000 pounds in 1912. France takes the largest portion of the crop.

FERTILIZERS

Fertilizers may be complete or incomplete; direct or indirect.

A complete fertilizer is one that contains each of the three elements of plant food, nitrogen, phosphoric acid and potash.

An incomplete fertilizer is one that contains only one or two of the three elements, nitrogen, phosphoric acid and potash.

A direct fertilizer is one that contains any or all of the three plant food elements, nitrogen, phosphoric acid and potash. A direct fertilizer is used for the plant food which it contains.

An indirect fertilizer is one that does not contain nitrogen, phosphoric acid or potash. An indirect fertilizer is not applied for the purpose of adding plant food to the soil, but in order to make some of the plant food already in the soil more available. The chief indirect fertilizers are land plaster, lime and common salt.

Land plaster, gypsum or calcium sulphate. These are different names for the same compound. Gypsum or land plaster is nothing more than the sulphate of lime rock which has been ground exceedingly fine.

Quicklime and calcium carbonate. When limestone is burned the resulting product is calcium oxide or quicklime, sometimes called stone-lime. When exposed to the air it becomes air-slacked and is then calcium carbonate or carbonate of lime.

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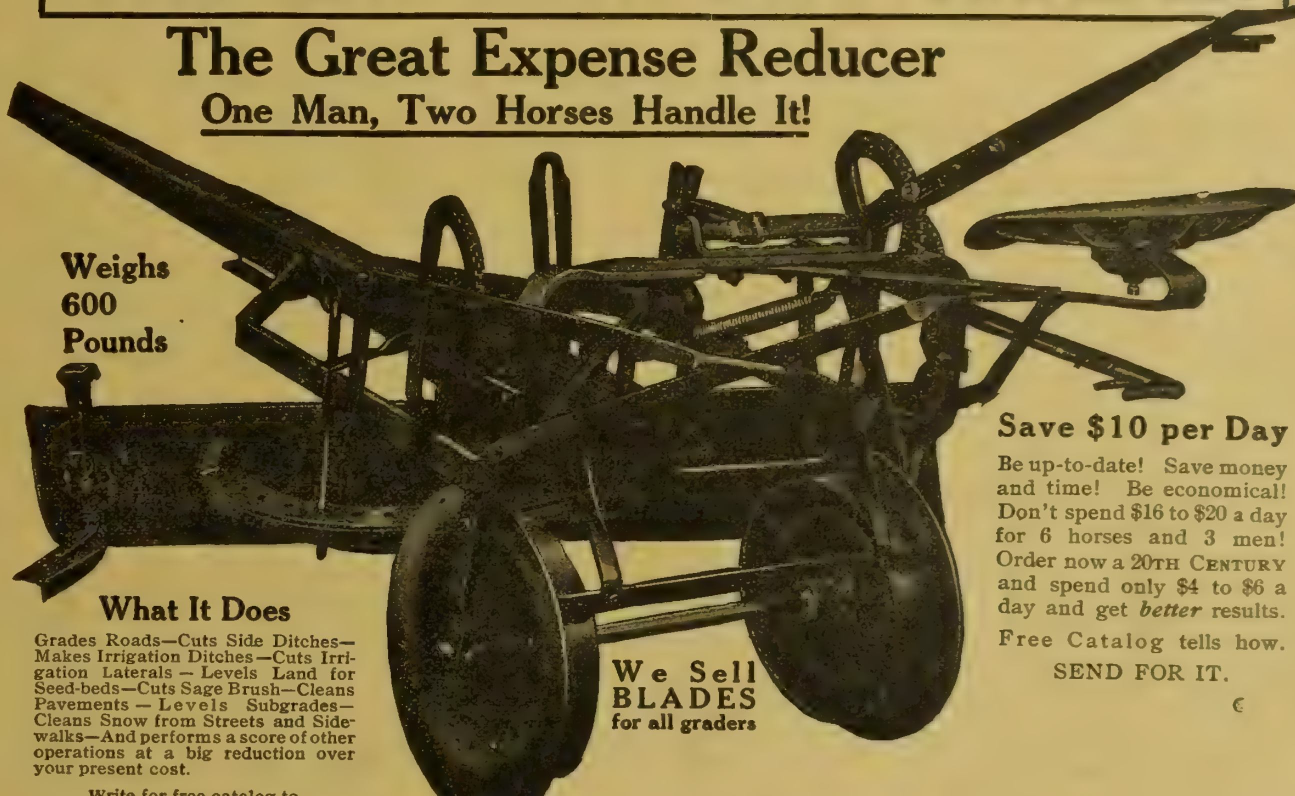

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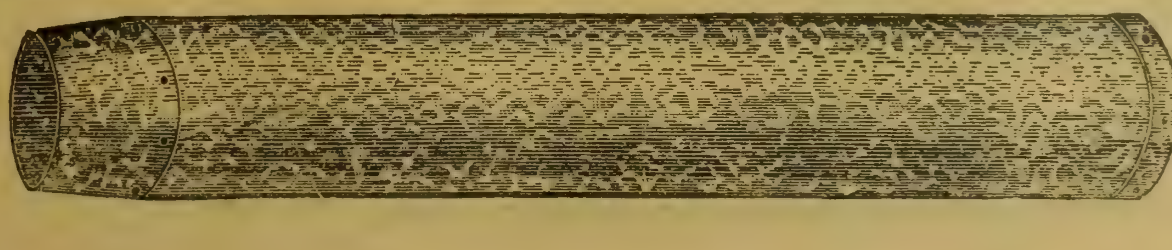

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Deciduous Fruit Culture

MAKING VINEGAR

A San Joaquin County subscriber requests information as to making vinegar from cull apples. We reprint from a former Cultivator an article which gave most explicit instructions taken from a bulletin of the New York experiment station. First, we might mention that our subscriber will necessarily have to get a small cider mill or in some way crush apples and press from the pomace all the juice, or at least it would be better to do so, though it is possible if apples are crushed and allowed to ferment, afterwards racking off the fermenting liquor, it will prove successful. The writer once made an excellent vinegar by using a barrel of pear parings over which water was poured, and after fermentation the liquor was racked off, allowing it to ferment in the natural way.

In making vinegar never use tin or galvanized vessels for the liquid; wooden containers are the best.

Probably the best way of handling these parings or cull fruit products would be to allow to stand and ferment a few days, then rack the liquid off into a barrel containing a little vinegar. This will hasten the process. When made in this way, any rinsings from molasses barrels add to the strength and quality of the vinegar. But here is the article by the experiment station on the making of cider vinegar:

Making Cider Vinegar.

When apple juice is left exposed to the air, it is gradually changed, losing its sweet taste and giving off bubbles of gas more or less vigorously. The most prominent change is in the conversion of the sugars into alcohol and carbon dioxide gas. This change is shown as the alcoholic fermentation, and is caused by a vegetable ferment, or an enzyme, which is produced by ordinary yeasts. Cells of the yeast plant are so widely distributed that they get into apple juice abundantly under ordinary conditions.

Theoretically, we should be able to get from 100 parts of apple juice about 51 parts of alcohol. In actual practice, we are not able to obtain this amount, because some of the alcohol is lost by evaporation and some is lost by certain chemical changes that take place along with the alcoholic fermentation. In general, we may expect that in the usual fermentation of apple juice, 45 to 47 parts of alcohol will be obtained from 100 parts of the sugars of apple juice.

It may be mentioned that in freshly expressed apple juice, prepared from sound fruit, I have never been able to find any alcohol. Sweet cider is, therefore, a strictly temperance beverage; but, perhaps, not every one could be trusted to tell just where the dividing line is between "sweet' and "hard" cider.

The rapidity of alcoholic fermentation depends largely upon temperature. In ordinary cellar storage, at a temperature of about 50 F., it takes about six months to convert the apple juice sugars entirely into alcohol. At a temperature of 75 to 85 F., this time can be reduced one-half or more. The higher the temperature the more rapid is the fermentation. There is one serious objection, however, to temperatures above 75 F., and that is the loss of alcohol by evaporation. This is favored also by the rapid escape of gas when the fermentation is very vigorous.

After alcoholic fermentation is completed, another change takes place—the alcohol is converted into acetic acid, and the final object of the vinegar maker is the production of acetic acid. This change is brought about through the agency of microorganisms, called acetic bacteria, these being entirely different from those that change sugars into alcohol.

For the effective conversion of alcohol into acetic acid or of cider into vinegar, there are needed: (1) acetic bacteria; (2) an abundant supply of air, and (3) a temperature of between 65 and 85 F.

There is commonly noticed in vinegar a very elastic, slimy, tough, transparent skin of a yellowish-white color; this skin is commonly known as "mother" of vinegar. This appears to be formed by the growth of the acetic bacteria on the surface of the liquid. When one skin has formed, it settles sooner or later and in its place another is formed, and this formation and replacement continue as long as air is supplied under favorable temperature conditions and as long as unchanged alcohol remains.

The chief change that takes place in the acetic fermentation of alcohol is the taking up of oxygen by alcohol, which is thus changed into acetic acid. Hence air is an absolute essential.

Acetic fermentation as usually conducted by farmers, takes place much more slowly than the alcoholic, often requiring eighteen months, and in some cases two or three years. The most satisfactory results have been obtained by us at temperatures between 65 and 75 F.

The following is a practical method of inoculating cider with acetic bacteria. When the alcoholic fermentation has stopped, which, under favorable conditions, should be in one to three months, the cider is placed in barrels, filling half full and then adding one-fourth volume of old vinegar. Mother of vinegar is then prepared as follows and added: Expose in a shallow, uncovered crock or wooden pail a mixture of one-half old vinegar and one-half hard cider at 80 F. In three or four days the surface should be covered with a gelatinous coating, which is "mother" of vinegar. A little of this carefully removed with a wooden spoon or flat stick should be laid gently on the surface of the mixture of cider and vinegar prepared as described above. Do not stir it in, because the acetic ferment grows only on the surface where it can have an abundant air supply. In three or four days the coating should spread itself over the entire surface. This coating should not be broken or disturbed as long as the acetic fermentation is going along satisfactorily. When this method is followed the vinegar should be complete and marketable in one to three months after the alcoholic fermentation is finished.

In this connection we may mention also vinegar-eels, which are so unpleasantly common in many home-made vinegars. They are produced by the small flies that infest exposed or decaying fruits. One method of keeping them out is to keep the apple juice from continued exposure. The placing of a loose cotton plug in the bunghole of the barrel in which fermentation takes place effectively keeps out the flies after the juice is barreled. When vinegar is found to be badly infested with eels, the only safe treatment is to heat the vinegar to 185 F., not above this, and strain, cleaning and steaming the barrel before replacing the vinegar and keeping the bungholes closed. Vinegar eels, besides being offensive to consumers, cause the vinegar to deteriorate sooner or later.

FIGHTING RED SPIDER

Yellow mites, sometimes called red spiders, are beginning to do serious injury to foliage on prune and almond trees in the Sacramento Valley. The pest was very serious last year, the trees in many orchards being entirely defoliated. The mites are very small and suck the juice from the under side of the leaves. A dusty brown appearance indicates their presence. Several treatments are used. One is to dust sublimed flowers of sulphur into the trees with a blower by throwing in with the hands or dusting on through a coarse bag, in the case of small trees. The sun liberates gas which kills the mites. Another treatment is to spray with atomic sulphur at the rate of 6 to 7½ pounds to 100 gallons of water. To be effective the spray must be driven to the under side of the leaf with force so that the entire surface is covered and gas can be liberated everywhere that there is a mite. Wetting the top surface of the leaf does little, if any, good.

Another treatment that is being used is flour paste made with cold water—six pounds of flour to one gallon of water—this added to 100 gallons of spray. To this is added three to six pounds of sublimed flowers of sulphur. The paste gives more even distribution of sulphur and makes it stick—and "gums up" many of the mites.

It is important to start to fight this pest at its first appearance, for it soon destroys the tissue of the leaves, and the tree must make new leaves instead of wood and fruit.

This mite is one of the most annoying things in deciduous fruit growing in the Sacramento Valley, but one that every one should be always prepared to fight. Supplies of material for spray, and sprayers, should be kept in readiness all the time, then no delay ensues in stopping damage before it gets too much of a start.

THE STATUS, POSSIBILITIES AND METHODS OF FIG CULTURE IN CALIFORNIA

(Continued from Page 51)

on the size of the trees, but the contracts range from $1.00 to $5.00 per tree, and it is no unusual thing for these contracts to involve sums as high as $5,000.00 per annum. The contractors bear all of the expense of harvesting; the grower merely prunes and cultivates his orchard under this arrangement. These advance contracts have been made exclusively with the White Adriatic figs, for it is only within the last few years that the Smyrna fig orchards have reached the age of full bearing.

The preserving of figs has never been attempted on any scale in California, and this is really very surprising considering the enormous demand there is for figs in this shape and that California draws all of her supply practically from Texas and Louisiana.

One firm in Texas puts up a large quantity of these figs which are known there as the Magnolia and which are in reality the Brown Turkey, a rather inferior fig at the best. The tree is a very poor and unsatisfactory grower; nevertheless when preserved the figs are very sweet and delicious, the heavy syrup being largely responsible for this flavor. The drying of the figs in Texas is out of the question owing to the rainfall during the summer months, therefore this is the only method for disposing of their crop. Considering that this inferior fig can be manufactured into a commercial product by using proper materials to create a desirable flavor, what are the opportunities in this direction for the Calimyrna, White Adriatic and White Endich, all of which possess merits making them preeminently better adapted to this than the very inferior Magnolia fig.

Unlike many other fruits, the fig in order to produce a high grade article must be allowed to remain on the tree until it loses its original form, shrivels up and drops off. Sometimes it is necessary to jar the trees slightly if the shriveled figs do not drop, or knock them off with light bamboo poles. From the orchard they are hauled to the drying ground which should either be a hard piece of ground or an alfalfa field.

The figs are dumped on trays which are stacked at once, for, as a general rule all figs—with the exception of the very large ones—are dried sufficiently so that when they come on to the drying ground no further exposure to the sun is necessary. One of the universal complaints of California figs has been their tough skin. This is not due to any unfavorable climatic or soil condition, but is the result of over-drying. The sorting of the figs may be commenced two days after they have been placed on the trays. All the figs which have a slightly leathery feeling to the touch are thrown into a pile by themselves in the drying shed, and the bird picked and split figs into the cull pile. These are not lost by any means, but sell readily at two and a half to three cents per pound. The soft figs are packed on trays as before, the trays are stacked, and the figs remain on them until they reach the proper degree of dryness when they are thrown in with the others. It is advisable to leave the figs in the pile, which may be from three to six feet deep without the fruit being damaged in the least, for a period of two weeks, turning the figs over with a scoop shovel at least once during this period or oftener if time will permit.

Just prior to delivering to the packing house give the figs a thorough washing in a brine having not less than four ounces of salt dissolved in a gallon of water. A prune dipper may be used to good advantage for this work. The figs should remain in this brine for a period of 10 to 15 minutes, depending on their condition. They are once more placed on trays, two or three inches deep, exposed to the sun for half a day to allow the water to drain off, and the trays are again stacked. Within two days they can be dumped into sweat boxes and are ready for delivery. This processing not only cleanses the figs, but it softens the skins, causing them to feel like a kid glove when squeezed between the fingers, and in addition to this the figs present a bright and most inviting aspect. They are a delight to the eye and appeal to the palate as no other fruit does.

Bear in mind that the fig tree is of a spreading habit, and is also a great surface feeder. Therefore avoid planting the trees too close together. On sandy soil trees may be planted 25 feet apart, but on a good loamy soil 30 feet is a good distance, while in exceptionally rich land 35 would be preferable. On the general run of soils 30 feet is a safe distance to plant. As a border tree for enclosing orchards or vineyards or for aligning avenues, the trees are not only very striking in appearance and exceedingly ornamental, but also very profitable.

Although the fig will stand all kinds of neglect after it is established, too great emphasis cannot be laid on the close attention which must be given in transplanting the trees from the nursery to the orchard. The roots of a fig tree are very susceptible to exposure, hence should be carefully covered in transferring them from the trenches to the field. Before planting cut off all the bruised and lacerated roots and make a fresh cut on all the other roots.

It is surprising what effect the puddling of the roots will have in preventing their drying out even in cases of severe winds, and we cannot emphasize the importance of this too strongly. As an illustration of this point we wish to say we have taken trees which were in leaf, and after puddling the roots, thrown them into the open air for a couple of hours, and not a leaf would wilt, while trees not treated in this manner would dry up, root and top, in ten minutes exposure. To make a puddle dig a hole 18 inches deep, two feet in diameter fill it partly full with heavy soil, mi

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with water until you have a muck the consistency of a heavy paint. Dip the roots into this, and give no further concern about their drying out, even if exposed to the direct rays of the sun for a short period.

The tree when planted should not stand more than three inches deeper than it stood in the nursery row. Never neglect to settle the earth around the trees with not less than 15 gallons of water. After the water has soaked away fill in with fine soil without tamping. No greater mistake can be made than to wait for rain or for water to be turned into the irrigating ditches. After the tree is planted cut back 20 inches from the ground and cover the wound with rubber paint or coal tar.

The first winter cut the branches of the one year trees back to about 12 inches, leaving not more than four to make the head of a tree. Have these distributed in such a manner that there will be sufficient room for them to expand without crowding as the tree grows older. The second season cut not less than two-thirds of the new growth, leaving not more than two shoots on each of the frame work branches. Any branches on the underside of the limbs having a tendency to droop to the ground should be removed. The third season shorten in the new growth about half, leaving the same multiple of branches on each of the previous year's shoots as were left the year before. In after years the pruning is limited to the removal of branches which cross or interfere with each other and checking of branches making an excessive growth. Young trees should always be protected with tree protectors to prevent sunburn. The fig tree is just as responsive to good care and thorough cultivation as any other variety of fruit tree, and the bearing capabilities will be commensurate with the care bestowed on the trees while young. But very little fruit is to be expected till the trees are four years old.

As you will observe, my remarks have been made almost exclusively with reference to the Smyrna fig as grown in California. I do not wish to be placed in the position of minimizing in any way the value of the Adriatic type of fig. Until the introduction of the Calimyrna and its successful establishment as a commercial article the White Adriatic, of all white figs grown in California, was the first, and is still being extensively shipped and probably will be for many years to come, although I am of the opinion that as the industry develops, and it surely will now that we have a fig equal to the world famous Smyrna fig, with the additional fact in its favor that the fig as grown in California is superior to the imported article, it is only a question of a short time when practically all of our dried figs will be of this type. White Adriatics may be grafted over to the Smyrna without incurring any severe loss to the grower, except that he will be out of the crop for say three years. There is no fruit grown that has not its shortcomings, and the Calimyrna is no exception to the rule, but its bad points are so infinitesimally small as compared with the Adriatic that any objections that are made to it are not worthy of consideration. The very fact that the White Adriatic sours badly if there should happen to be any cool weather during the early part of the drying season, and also that it is necessary to sulphur the figs, not only to obtain a better color of the skins but also for the purpose of neutralizing the sour taste which is so pronounced in these figs, is enough to relegate it to the background.

As to the Mission or California Black, I want to say that it is deserving of more prominence than it has received among our dried fruits. Its skin is so thin when dried that one is led to believe that it has no skin, and as to the flavor, it certainly stands next in this respect to the Calimyrna. Trees are enormous growers and very heavy croppers. The first crop is well adapted for shipping purposes, and the second crop not only ships but dries well. This fig can be dried at even less expense than the Calimyrna. The only objection that may be cited against it is its color, and just why this happens to prevent its ready sale I am not prepared to say, except I do know that some seasons the fig sells well and there is every encouragement for more extensive planting, while at other times this fig is a drug on the market and difficult to sell at any price.

That fig culture in California is still in its infancy must be conceded when it is borne in mind that our annual production is less than half of our imports. All of these figs are grown in the Meander Valley, which is 85 miles long and only a few miles wide. You will be somewhat surprised when I tell you that 30,000 people are engaged in the handling of this one crop in Smyrna, and that the United States is today the greatest consumer of these figs—all this in spite of our rather high duty. Do you know that California is destined by reason of climate, soil and the establishment of the blastophaga to wrest this trade from Asia Minor and divert it to our own people? Is this not of itself an irrefutable reason for the affirmation that Smyrna fig culture is not only feasible but is sure to be highly profitable in this state.

KANSAS HORTICULTURAL SOCIETY

The Cultivator has just received Transactions of the Kansas State Horticultural Society, an organization formed some 50 years ago. Kansas fruit growers have formed a far more definite organization than have those of California. The biennial publications contain a great fund of information as to horticultural practices in that state.

FOOD AND FLAVOR

Food and Flavor, a Gastronomic Guide to Health and Good Living, by Henry T. Finck, published by The Century Company, New York, at $2.00 net, postage 18 cents.

"It is not too much to say that the most important problem now before the American public is to learn to enjoy the pleasures of the table and to insist on having savory food at every meal," and this book enters into the discussion of savory food in a most entertaining and instructive way. The book is not a book of recipes, it has little to do with the preparation of food, but it has much to do with the discussion of foods, their manner of handling and marketing, and especially does it discuss impure and improper foods, which it terms "our denatured foods." For instance, in referring to "smoked" ham, bacon and fish, it refers to the modern day method of using liquid smoke instead of the slower and possibly more expensive method of smoking meats. It refers to the analysis of one of these liquid "smokes," which it says consists of creosote, aniline dye and the salt of iron, the salt of iron presumably added to this so-called smoke in order to quickly give the appearance of natural rustiness. The London Lancet refers to this practice in rather caustic language and demands that tampering with the purity of food in this way should be strongly dealt with.

The cause for large packers using this liquid smoke in the preparation of ham and bacon is given in this paragraph:

"In conclusion, let me whisper in the reader's ear the secret why those who handle pork products and fish are so eager to get rid of the smoke house that during the process of smoking the ham and bacon may lose up to 20 per cent of its weight."

Referring again to the paragraph first quoted above it may possibly be that some reader of the Cultivator might think it was a book intended for the wealthy, in order to derive greater pleasures from more savory foods. This we do not believe is the case, for note these two paragraphs from a chapter on French supremacy:

"A grumbler might ask 'What's the use trying to learn new things from foreigners when so many of our families can hardly afford to buy the ordinary meats and vegetables for any kind of meal?'

"But it is precisely because foodstuffs are becoming expensive that we ought to look to the older and less extravagant nations of Europe for guidance. Our government has been commendably alert in this matter, doing a most useful service by issuing Farmers' Bulletin 381, which, as previously pointed out, shows how, by expert cooking, the cheaper cuts of meat may be made to yield more nutrition as well as more appetizing flavor than the choicest cuts as at present prepared in American households."

The general trend of the entire book is toward securing greater return for the money, both in actual nourishment and in the pleasures which come from the sense of taste, which the author maintains is a material factor in the health of the people It is a book in which the man will have as keen interest as will the woman.

There are 28 chapters and an excellent index. To give an idea of the more general aim of the book we quote some of the chapter headings: Ungastronomic America, Vital Importance of Flavor, Denatured Foods, Science of Savory Cooking, Future of Cooking, Epicurean Italy, German and Austrian Delicacies, British Specialties, Gastronomic America, etc.

RELATION OF ALFALFA TO SOIL IMPROVEMENT

The unqualified recommendation as a soil improver that is continually being given alfalfa is responsible for the very common belief that this crop is one which should be grown extensively on poor or unproductive soils.

It is true that, being a legume, it benefits the soil through the addition of nitrogen fixed by organisms forming nodules on its roots, and through its roots it not only supplies considerable quantities of humus, but greatly improves the mechanical condition of the soil.

In producing profitable yields of hay, alfalfa utilizes large quantities of phosphorus and potassium, which must be obtained either directly from the soil or from added fertilizer.

Whether alfalfa is a soil improver is a question which cannot be answered without some explanation. In the sense in which the term is commonly used, alfalfa is not a soil improving crop, since it cannot be utilized in the same manner as cowpeas, soy beans, crimson clover, or hairy vetch for the building up of wornout or depleted lands. On the other hand, it enriches the good soils through the nitrogen and humus added to the soil by its roots and crowns when the old field of alfalfa is broken up and also by the mechanical action of its roots upon the soil. Furthermore, the preparation of the land prior to seeding the alfalfa and the treatment in the way of top dressing and fertilizing which follow during the few years of its existence doubtless have a very beneficial effect on the crops succeeding it.

In actual practice, then, alfalfa improves good land, but cannot be considered in connection with poor land, as it is not a profitable crop to grow on unfertile soils.

If things don't seem to have any bright side at all, let me advise you to go to work and see if you can't do a little polishing on them somewhere or other.

Legal

Edw. L. Payne, attorney, 301-304 Douglas Building, Los Angeles, will answer legal queries in this department.

Immediate mail replies cannot be given except where fee to Mr. Payne is paid. When replies are wished in Cultivator address query to 115½ N. Broadway, Los Angeles.

Employers' Liability.

Is a person liable for damages in case of accident to household servants or chauffeur, and if so where should one apply for insurance?—Subscriber, Pasadena.

Household domestic servants are particularly excepted from the provisions of the workmen's compensation act, and the only liability of an employer for injury to one of them would be such liability as would arise by reason of negligence on the part of the employer. A chauffeur belongs to one of the classes of persons protected by the act. The act permits an employer to insure in a mutual or other insurance company against liability for compensation provided for by the act. The act also creates a fund known as the "state compensation insurance fund," to be administered by the industrial accident commission of the state for the purpose of insuring employers against liability for compensation under the act. Full information concerning rates, method of obtaining the insurance, etc., can be obtained from the Industrial Accident Commission, Hollingsworth Bldg., Los Angeles, or 907 Royal Insurance Bldg., 201 Sansome street, San Francisco.

Mother and Child.

Wife leaves husband and minor child and husband secures divorce and keeps child. In case they meet in a public place has the mother a right to talk to child if father does not wish her to?—Subscriber.

If the mother has never been deprived by court decree of the right to see and visit her child she still has that right notwithstanding the fact that the father is given the care and custody of the child in divorce proceedings. She can only exercise that right, however, at proper times and appropriate places. If there is any dispute between the parents as to what is a proper time and place, the court would have to settle that question.

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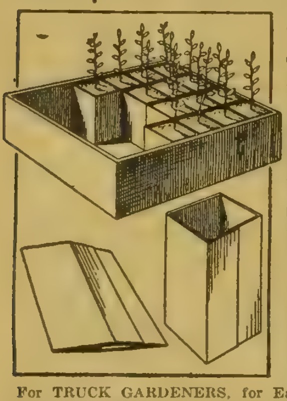

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Fig Growing and Marketing

Address by Henry Markarian Before the State Fruit Growers Convention

The fig industry of California is annually becoming a great and important factor in the export trade of the state. A little historic glance may prove of some interest to you. Fig culture was first introduced here by the Spaniards. The variety planted was known as the Black Mission, and was grown in gardens and backyards, but had no commercial importance in furnishing figs for drying. At that time one could occasionally find them sold green in San Francisco and Los Angeles markets. The White Adriatic was introduced in Fresno County in 1884. My father, Mr. M. Markarian, planted the borders of his vineyard to this variety. His example was emulated by others who planted the boundaries of their vineyards to Adriatic fig trees. Very little importance was attached at the outset to fig orchards, as the growers were uncertain of fig culture ever becoming a profitable industry. This is the reason there are so few bearing orchards now.

The fig trees reached maturity, but there being no demand for them, interest in the culture of same lacked. This apathy towards a promising industry was directly attributable to the growers' lack of sufficient knowledge to appreciate the product, cure and put it on the commercial market.

In 1893 we established a packing house in our vineyard to pack raisins and ship to eastern markets. This proved a success. The following year we bought a few crops of figs; especially do I remember how the crop on a 10-acre orchard cost us only the sum of $10, which alone yielded about 10 tons of dried figs that brought good results. Similar low prices prevailed on other places, the crops practically being given away. At first we did not know how to handle the crop, but conceived the happy idea of packing figs just the same way as we were packing raisins. Thereafter our shipments consisted chiefly of raisins and figs. The first shipment of California figs in any manner that went out to the east of the Rockies was made in 1894.

We encountered a good deal of doubt on the part of the eastern houses as to the keeping quality of California figs, which we had to guarantee. Our efforts along this line were partly compensated by the reception accorded to the home product. As the industry advanced the demand for figs increased, thus affording a golden opportunity to the growers to stimulate fig culture. Others soon established packing houses to handle the crops for export trade. One of the primary causes of the successful California fig export trade was the destruction of Smyrna figs by a heavy frost in Asia Minor in the year 1898. That year the east largely depended for its supply on the California product, at which time Seropian brothers, packers, accumulated a fortune of $40,000 by having a corner in the fig market.

In 1900, through the efforts of Mr. George C. Roeding and the department of agriculture, the fig wasp, know as blastophaga, was established in Roeding's Smyrna fig grove. This revolutioized the fig industry in California and opened a new era. The idea of Califoria figs being of inferior quality compared with foreign imported figs was soon dissipated by the introduction of the Smyrna variety in our markets. There are two grades of figs, the Smyrna variety and the Adriatic, which we offer to the eastern trade, the former being the king of figs.

I am a profound advocate of the Smyrna figs and I have several reasons for my advocacy. First, the superiority of the fruit; second, the quick maturity of the tree (Smyrna fig trees mature in six years, White Adriatic in eight years); third, the trees show very little or none of the root diseases so common to Adriatics; fourth, the trees are well adapted to an orchard form when they are planted 30x30 feet apart, whereas the Adriatic at this distance would not be satisfactory. The tendency of the Smyrna fig tree root is to go downward and deeper into the soil, while those of the Adriatic have a tendency to spread circumferentially in a shallow depth; fifth, because it is a fine and luscious fruit, infinitely useful and nutritious and free from souring. It may be shipped green and find a ready market with every prospect of good financial return.

Finally, the demand for Smyrna figs is greater than for any other variety, and I can safely guarantee that the market will not fluctuate on account of overproduction within the next 20 years. I am fully convinced, judging from unabated activities shown in the production of Smyrna figs, that this industry is destined to become one of the leading fruit industries of California. I do not exaggerate a particle when I say that 75 per cent of the anual fig output is consumed by the biscuit and pastry manufacturers of the country for making the well-known delicacies such as fig bars, fig jams, fig biscuits, etc.

To grow figs successfully one must study the nature of the soil and the climatic conditions. The best region to grow for drying would be that geographical portion of the San Joaquin valley that has Merced on the north, Bakersfield on the south, and commencing from the center of the valley, the closer you get to the Sierra foothills, the more satisfactory it is for this culture. Red, heavy and deep soil, with plenty of irrigation water is desirable. The red hardpan soil, if properly blasted, is good for fig culture. Although trees take a longer time to mature in this kind of soil, it will produce clean and elegant fruit, with hardly any splits. The life of the tree under these favorable conditions would almost be everlasting. In sandy soil (drift sand) and alkali, planting is an absolute failure. Another section fairly adapted for the culture of the fig is the region lying between Marysville and Red Bluff in the Sacramento valley.

Being one of the pioneers in Smyrna fig culture, I have faced many difficulties, but have overcome them with patience ad common sense experiments. These difficulties have now vanished through the giving away from time to time of the secrets by experienced growers to beginners, and the arduous, incessant work of Prof. G. P. Rixford of the agricultural department. My chief trouble arose in the early days from insufficient knowledge of caprification. After securing a collection of different varieties of capris, which was imperative in Smyrna fig culture, my most difficult problem was satisfactorily solved.

The annual production of figs in California is approximately as follows: White Adriatic, 5000 tons, 3800 tons being grown in Fresno County; Smyrna figs, 600 tons, 400 tons being grown in Fresno County; Black Mission, 300 tons, 100 tons being grown in Fresno County.

UNLOCK THE SAFE

If an old, rusty safe, with doors locked, fell into the hands of a farmer and if he knew that this safe contained $10,000, it would be a great incentive to try to unlock the safe and utilize the money. So also if a farmer has his soil analyzed and finds that it contains 30,000 to 40,000 pounds of plant food per acre, even if not available, this fact should be worth much to the farmer because it should give him a strong incentive to try and farm in such a way as to gradually make available for his crops this vast amount of plant food which is locked up in his soil. The plant food in the soil is the farmer's capital, or money just as much as the $10,000 in the old, rusty safe.

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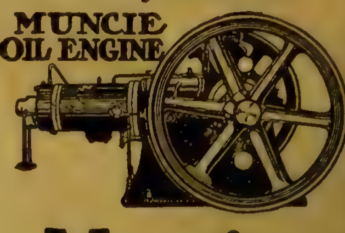

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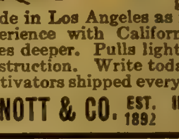

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The Ornamental Garden

RURAL IMPROVEMENT

Written for the California Cultivator
By Ernest Braunton.

From all parts of California come reports of civic awakening in rural districts. In the southern part of the state, where I am wont to wander at random, the individual rancher, especially the citrus grower, is busy devising ways and means to make his ranch attractive. Not only must it be attractive, but distinguished by one or more features of unusual beauty. We constantly hear of or see a mile of fence over which is clambering a solid mass of Cecile Brunner roses, or the ranch frontage is aligned and protected by a hedge of ragged Robin roses.

As little as I am tied to the office in the city, there comes a feeling of relief whenever called into the country, and nothing I see upon returning, aside from my own family, compensates me for what I have left behind in the way of rural charms and sufficiency. Why should not one garden in the country? As the Englishman said when asked if it was not wonderful to see so much water tumbling down at Niagara Falls: "But there's nothing to prevent it, you know." Nothing to prevent; everything to encourage. Why should we not have fine gardens in the country? What backgrounds and surroundings amidst the orange groves!

In rural districts there are no gasses, reflected heat from cement walks, limitations of parkways, competition for light and air and but a short time when the smudge pot casts its baneful soot upon the glorious natural crop of flowers growing under conditions so natural that failure is well-nigh impossible. One of the most serious problems confronting the city garden builder or designer lies in harmonizing the garden with its surroundings and obtaining a suitable background. From these perplexities and problems the rural districts are free; one reason why the present writer so loves his chosen field of landscape design in rural homes. There is, however, one point where a new difficulty arises. So beautiful, so satisfying is an orange grove that one is moved to exercise his utmost ingenuity to really embellish the boundaries, for how may one add to the beauty of the rainbow? The ownership of automobiles is now so unisal in the country, the good roads systems provide such magnificent highways, that no division between city and country is noticeable except the unusual and wholly artificial congestion as one nears commercial centers. The time is close at hand when the finest gardens, in extent, in appointment, in class of material, will be found amidst strictly rural surroundings.

Roses Require Rest.

Roses in California require the same amount of rest that winter forces upon them in the cold eastern states. To enforce this it is necessary to deprive the plants of water toward the close of summer. If roses have been standing in present position for several years, water heavily once right away and then give no more until the cool weather of autumn comes upon us. During this rest the leaves may turn yellow, even drop off, the bark on the softer growths may wither, but the plants will not be harmed. In October prune severely, remove all small wood, open centers, cut back two-thirds in length, irrigate and cultivate. When growth is well started, fertilize. Then you will get real roses.

Transplant Natives.

The present season has been a glorious one for native vegetation, and some of this should find its way into gardens this fall. Note what you would like to have for your premises and in September cut back the trees or shrubs heavily, leaving but little top; transplant to your garden, water heavily and if convenient cover the tops for two or three weeks. You will get an agreeable surprise in seeing a quick and vigorous response, and later in the rainy season, or at its close you will have all the native glory that you so much admired right in your own door-yard. Each year thereafter will find you borrowing from nature's bounteous supply.

Carnation Propagaation.

It often occurs that home owners have plants of fine carnataions of which they wish more stock but do not know the names of the varieties. It looks as if the easiest way out of the difficulty is to propagate at home rather than seek the uncertainties of the market with its attendant loss of time. As but a few plants are wanted layering is a better and far surer method of increse than by making cuttings.

Select strong vigorous side shoots, With a sharp knife cut half way through stem at a long, slanting angle. Dig away a little earth beneath this point. Rush the half-cut portion down in the soil and cover up. Keep well watered for some weeks, and at the end of the period examine the cut portion to see if the half-severed tip has rooted. When rooted freely the remaining part of the stem may be cut through and the young plant set out by itself. A large-sized plant may be surrounded by a score of such "layers", and if the work has been properly done all will readily root and quickly make flowering plants. While early spring is usually selected for this work, any time during the active season will bring success if sufficient care is exercised.

House Sites.

Care should be taken when choosing house sites in rural situations, for no skill on the part of the designer and planter can overcome great natural defects, though these may be somewhat lessened through the expenditure of funds. It is not enough that a site should command a fine view for it may yet be devoid of possibilities in planting or even planning. We must not consider all points from the site, for really the house should be set where it will look best, even though another site might present a finer outlook. If it is too hard of approach or appears forced into an unnatural position nothing in the way of planning or planting can compensate for the deficiency.

Highway Planting.

In California trees for street and highway planting may be procured and planted at lower cost than elsewhere. Therefore should we have more of them. When choosing suitable trees look about in your own neighborhood for the best that have stood the test of time. There is no better criterion. Do not think of writing to officials for advice when by using your eyes you can learn all you wish. It may be possible that peppers and acacias are what you should plant while some road overseer or other official is trying to make magnolias grow in upland hard-pan. Experience is the best teacher, and if you have had none, look about in the immediate vicinity for mute but incontrovertible evidence of fitness.

The Glorious Pepper.

The pepper tree is and ever will remain the most popular tree in the southern part of California. No matter how much warfare is waged against it as a host for the black-scale, the balance will ever stand in favor of the tree, for in-as-much as such pests must be kept under control on citrus trees why not exercise the same care with the pepper tree. This scale no more contaminates the pepper than it does the orange. If both are equally neglected methinks the pepper tree will harbor the lesser amount of scale. But while we fumigate, spray, fertilize and cultivate the orange tree it should occasion no suprise to find the latter most heavily infested.

The Matilija Poppy.

Each year I grow the matilija poppy my love for it grows deeper, for we have no plant native to California that is worthy of more extensive planting in the home grounds. With me it is not quite a pest, yet it rapidly spreads each year in my garden while neighbors cannot induce a vigorous growth on the plant; others cannot even establish one at all. After putting a young plant in the soil leave it alone; even neglect it, and success will be yours. If you cultivate or fertilize or over-water you will doubtless fail to establish this noble native plant.

BELLINGHAM BULB GARDEN.

As is well-known in the trade, the United States department of agriculture began some years ago an experimental bulb farm at Bellingham, Washington, after an exhaustive investigation of climatic and soil conditions, to learn if bulb growing might not become a domestic industry and obviate the necessity of importing from Europe. The results of the investigations carried on so far are embodied in a bulletin issued a short time ago by the department. The bulletin begins by saying that the United States today is one of the largest consumers of what are known as "Dutch bulbs." "The value of the annual imports of these extremely popular spring-flowering bulbs for planting out of doors and forcing under glass exceeds $1,000,000. The major part of these should, and it is believed can, be grown at home."

The garden takes up a strip of land about 250x1600 feet, 2½ miles west of Bellingham, which is in latitude 48 degrees north and about 122 degrees longitude west. The mean average temperature is 50.2 degrees, and the annual rainfall 30 to 40 inches. It is in the Puget Sound region and the soil is composed of silt loam, carrying a heavy quantity of decomposed organic matter. Thus far the work has been confined to the propagation and growing of hyacinths, tulips and narcissi. In 1908, when the garden was established, 170,466 bulbs were planted. In 1912 the number planted exceeded a million.

The bulletin says that "the experiments at Bellingham garden have demonstrated beyond question that narcissi of excellent quality can be grown there and that the Double Von Sion variety, one of the most popular of the forcing narcissi, and one that heretofore has baffled every effort to produce it commercially in this country, can be successfully grown in the Puget Sound region. The first flowers from imported bulbs of this variety are usually fine, perfect, double flowers of excellent substance and quality. The same bulbs if grown longer than the first season after being imported produce, as a rule, throughout the United States, with the apparent exception of the Puget Sound region, greenish, malformed flowers. The flowers from bulbs grown at the garden for three seasons were practically perfect and compared favorably with those from imported bulbs." The bulletin also says: "Tulips in variety can be successfully grown in commercial quantities in many sections of the United States. The tests so far show that tulips grown at the United States bulb garden are superior in several respects to imported bulbs." The hyacinth tests were carried on on an extensive scale and showed very encouraging results.

"Hyacinths are propagated naturally either by slab or by seed; artificially by bulblets secured entirely by scooping or scoring mature or so-called mother bulbs. The narcissus is propagated by seeds when it is desired to secure new varieties. The commercial method of propagation of the narcissus, however, is by offsets. The increase secured at the garden varies according to variety, from 99 to 380 per cent." The time required is from three to five years. "The propagation of tulips tested at the garden has been by offsets. The increase is from 67 to 273 per cent, depending upon the variety. The bulbs for the most part have been planted in beds, practically the same as hyacinths. If new varieties are desired, they are secured by means of seed."

"Before the department of agriculture will be justified in advocating the growing of so-called 'Dutch bulbs' as a commercial industry in this country, much remains to be learned regarding the climatic and soil conditions best suited to the crop; the selection, clearing, grading and preparation of the land (much of that in the far northwest which is now thought to be well located and suitable to bulb growing will cost from $75 to $150 per acre to put it in shape for planting, in addition to the cost of the land); the prevention and control of diseases affecting the crop, of which a considerable number are more or less serious; and the propagation, cultivation, fertilization, growing, harvesting, curing, storing, transportation, and marketing of the crop."

KILLING DANDELION WITH IRON SULPHATE

The Colorado agricultural college has conducted a series of experiments with killing dandelions in lawns, using four solutions, one of the strength of 20 per cent, one of 10, another of 5, another of 2½. The two stronger sprays killed all the leaves of the dandelion, also somewhat blackened the grass. It afterwards showed a darker and richer green than the untreated areas. The conclusions reached by those conducting the experiments are given as follows: It is evident that a 15 per cent solution should be practically as effective as the 20 per cent for this purpose, and that three applications, the first as soon as the plants are in full leaf in the spring; the second in about three weeks, and the last in midsummer, should prove effective in controlling this pest. Although the grass was very thin on the areas treated it soon began to thicken and by October 1st formed a fairly close sod. Nearly all the white clover was killed by the two strongest solutions. This could be replaced quite readily, however, by scattering a little seed over the soil after the last treatment, keeping the lawn well watered for a week or two. In treating lawns bordered by stone or cement walks care should be taken to keep the solution from wetting them, as it produces a rather permanent yellowish stain.

TOO MUCH TONGUE

After he had kissed her and pressed her rosy cheek against his and patted her soft round chin, she drew back and said:

"George, do you shave yourself?"

"Yes," he replied.

"I thought so," she said. "Your face is the roughest I ever—"

Then she stopped, but it was too late, and he went away with a cold, heavy lump in his breast.

IN GOOD COMPANY

A contemporary wants to know what's become of the old-fashioned man who used to say, "I says, says I."

When last seen he was standing on a street corner in close conversation with the old-fashioned man who says, "Sezee to me, sezee." — Cleveland Plain Dealer.

AN INSIDE VIEW

"My gracious boy," said his uncle. "you do certainly eat an awful lot for a little boy."

"Well, sir,' replied the boy, "maybe I'm not so little as I look from the outside."—American Boy.

TREES

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For good roots, thrift, and hardiness they can't be beat. Quality considered they challenge all competition. We are prepared to furnish the best of everything. Olive, Almond, Peach, Pear, Plum, Prune, Apricot, Cherry, Apple, Walnut, Grape, Quince, etc.

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San Dimas Citrus Nurseries
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Established in 1890 by R. M. Teague
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Teague trees are started right, grown right, and shipped right.

General Agriculture

POTATO CONVENTION

By Dr. A. J. Cook, State Horticultural Commissioner.

The potato emergency convention will convene at Stockton, not in August as previously announced, but on the 8th and 9th of September. This change is made at the suggestion of the United States department of agriculture and will bring to us Doctor Appel, a very noted potato pathologist from Europe, and Doctor Orton and Professor Stuart, experts from the U. S. department of agriculture, none of whom could be present at the earlier dates.

The Condition Stated

The tuber moth is a damaging pest of the potato. The caterpillar not only ruins the infested tuber but may be carried in it wherever the tuber may go, and so is a menace always. It is clear then that a state or region free of the pest is warranted in taking stringent measures to remain free. This necessitates action to restrain all importation of affected tubers. There are only two ways to insure this imperative necessity: Either the shipper must inspect so carefully and weed out so rigorously that no infected potatoes are shipped, or else all growers in moth-free sections must declare and enforce a strict quarantine. As we have not exercised the needed caution in making shipments, British Columbia, Idaho and Colorado, actually, and Oregon and Washington, practically, have resorted to the quarantine. Other states are likely to follow if we are not aroused to immediate and effective action. The magnitude of our potato interest is large, and the injury to our growers and shippers of this embargo is great.

Unfortunately this moth is widely distributed throughout our state, though many sections, possibly whole counties, are free of attack. This fact gains wide publicity through "Farmers' Bulletin 557" of the U. S. department of agriculture.

We quote: "For many years the potato tuber moth has been the worst potato pest in California. It has now reached the state of Washington and Southern Texas and menaces adjacent states." It is also reported from Colorado and doubtfully from North Dakota. In all but California its distribution is quite limited. This, of course, works doubly to make our danger the more imminent. What adds to the gravity of the situation is the fact that the moth has been in California for years and in the other localities but a brief period, and all the other localities are large consumers of our potatoes.

We see then that our only escape must come through education of all potato growers that the moth may be held in check by all growers, Orientals as well as Americans, and that inspection be so rigid that no infested potatoes are shipped from our state.

This convention is called to take steps to secure this education of all growers that they may eradicate the moth, and to arouse all to the absolute necessity of the most rigorous inspection that not a single infested tuber shall be shipped to any other state or any tuber moth-free section.

USE OF AUTO WITH LEAST EXPENSE.

"To what work shall I put my automobile in order to realize the greatest possible benefit? What amount of pleasure and profit can I reasonably demand from it, and what is the least up-keep expense I can calculate on in its operation?"

The answers to the above questions depend on a great many things—in the car as well as in its owner and operator. The wearing quality and working capacity of one car may be so superior to that of another car that any estimate as to upkeep is next to impossible. The care and knowledge and skill of one driver may be so much greater than that of another driver that no matter how efficient the machine may be which he handles it will give only a fair degree of satisfaction. Then there is the element of luck which always plays a very significant part in operating a car. Accidents which cannot be avoided, even by exercising the greatest care, may occur, bringing loss financial and otherwise. One farmer may make the purchase of a car a most profitable investment. His neighbor may curse the day when "the blamed thing was bought." The same make and quality of car, the time of purchase the same, the same care and judgment exercised in its operation, but not the same luck. Therefore it appears that care and skill and knowledge are factors which do not always count. Location plays an important part in the upkeep of a car. There are roads and roads, as every car owner has learned to his everlasting chagrin and loss. And some farmers who built their homes long before the arrival of the modern "road devil" are actually so located that it would be a neck-breaking feat to drive an auto up to their front door —a risk none would undertake except on a high wager.

Proper Care of Machine Necessary.

The best life preserver for any machine is proper care and use. By getting the most out of an automobile we, of course, mean that in point of service it has yielded a full return for the money invested in its purchase in the form of pleasure, utility and whatever has contributed to our benefit without subjecting us to more than a very reasonable expense in its up-keep. It is well, therefore, to spend a little time each day, if possible, in examining the machine to see where oiling is required and make necessary adjustments so that when needed the entire car is in tip-top running order. If the farmer takes the proper interest in the looks of his car he will go on for years with an outlay of but gasoline, lubricants and tire repairs. As the machine gets older the expense item will assume greater proportions. Bearings will wear out and need replacing, piston rings, spark plugs and such small items must be replaced by new parts. It becomes necessary therefore to give the car an occasional overhauling in order to ascertain its true condition as to pistons and bearings, etc., and to remove carbonized oil from the walls of the cylinder.

Knowledge of the Machine Necessary.

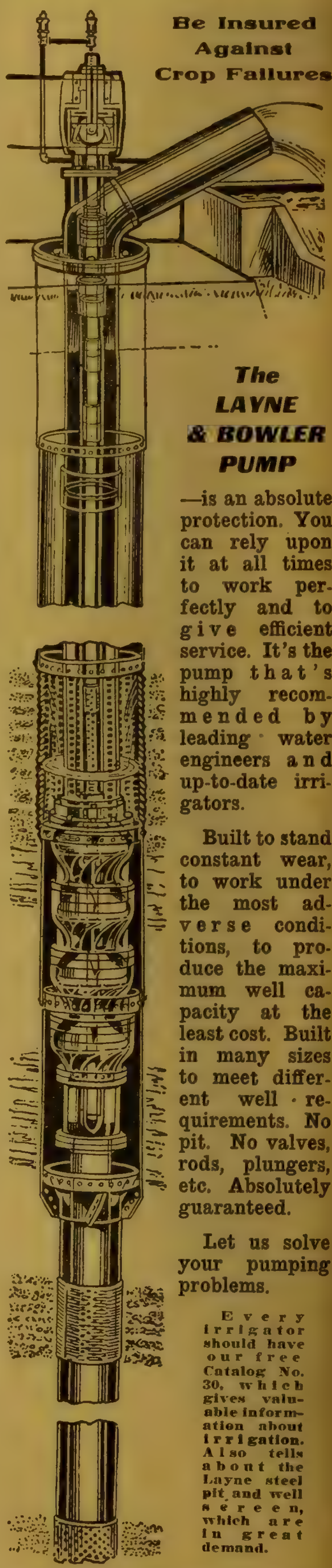
To know his machine, its various elements and their respective uses, the amount of work and strain to which each can be put without injury, is essential to the car owner. When troubles arise it is necessary to know how and where to locate them in order to make the quickest possible repairs and adjustments. A knowledge of the principle of carbureters and ignition is of great value to one who would properly and successfully run a gas engine. The carbureter troubles so frequently met with are mainly due to ignorance, inattention and carelessness rather than defective mechanism.

Keep Things Clean.

The collection of dirt is destructive to efficiency and economy as well. Care of the fuel, cooling and ignition system is of significant value. Here, as elsewhere, "knowledge is power," and the successful operator has informed himself along the lines indicated. He knows the necessary conditions of working and control, as well as how to meet the many mishaps and disorders which in the course of time every auto owner will encounter.

Care in Driving.

To go to town in the busy season for repairs, provisions, etc., and get back "in a jiffy," is all very well, but unless it be a life and death matter, don't speed. It is a senseless, insane practice which finds no excuse. It shortens the life of the tires and subjects the whole car to a needless strain. If often shortens human life as well. The highest degree of efficiency may be attained by driver and car as well, if sane methods are employed. A steady hand guided by an intelligent brain are the prime requisites. The farmer, accustomed to the care and operation of machines, makes a good driver.



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Who shows mercy to his beast will show mercy to his car." The careful, merciful horseman knows the commercial value of judicious driving and governs himself accordingly with results satisfactory to all concerned.

Care of Tires.

As the greatest single item of expense is the tire I will conclude this article with a few "Don'ts on Tires." If heeded the item of tire expense will be greatly reduced.

Don't speed.

Don't apply the brake suddenly unless absolutely necessary. Use the throttle more and the brakes less in controlling the car. This saves both the tires and the machine.

Don't allow grease and oils to come in contact with the tires. They destroy the rubber. So does rust. Paint, on the contrary, preserves it.

Don't allow the weight of the car to rest on deflated tires even when not in use.

Don't allow the side of the tire which shows more wear than the other to remain in the same position. Reverse the sides to insure even wear.

Don't ever run on a flat tire. If absolutely necessary and the distance is short, run on the rim.

Don't fail to transpose the rear and front tires when necessary, as the front tires wear less than the rear ones.

Don't be afraid to burst a tire by too much inflation. A tire, unless old or injured, is seldom over-inflated. The reverse is more often the case and does great injury.

Don't allow stored tires to get damp. It breaks down the fabric and weakens the shoe.

Don't allow blisters to form on the tire. Make prompt repairs.

Don't allow your front wheels to slide in a sidewise direction involving great wear on the treads. See that they are parallel.

High and steady temperature as well as strong steady light are destructive to rubber. Keep your auto when not in use, in a place where the tires are not thus tested.

Don't overload your automobile and see that the rims are straight and true.
—Farm Stock and Home.

GAS ENGINE SIMPLICITY.

Probably no other device invented for farm use, next to the self-binding harvester, has done so much to take the burden of labor from the farmer's shoulders as the gasoline engine. There are in use today approximately 7,000,000 gas engines in this country, and the number is growing rapidly. The gas engine, as built today, presents no obstacle to the man who can operate other farm implements. It is adjusted to run properly when it leaves the factory and ordinary care will keep it so. Trouble only comes when the engine is neglected, left outdoors, exposed to rust and ruin, not oiled, or abused in similar ways.

The engine which is today considered the most efficient and reliable is the four-cycle engine. Its main parts are the cylinder, piston, base, crankshaft and fly wheel. To study the simplicity of the gas engine you will note that the space in the cylinder between the head end and the head of the piston is what is known as the combustion chamber, and in operation there are four cycles or strokes for each explosion.

Starting with the piston at the head end of the cylinder, the piston then moves outward. This movement outward opens the admission valve, and the mixture of gasoline and air is sucked into the cylinder. This is termed the suction stroke. The cylinder being full of explosive gas and the valves being now closed this gas is compressed as the piston moves in toward the head end of the cylinder, and just before the piston reaches the extreme end of this stroke, a spark takes place in the combustion chamber and the gas is ignited, making the compression stroke.

The explosion occurs just as the piston begins its outward movement. The force of the explosion against the head end of the piston drives the piston outward. Hence, this is called the tower stroke and when the piston is at the end of this stroke the cylinder is full of burnt gas.

The exhaust valve is then opened and when the piston moves toward the head this burnt gas is driven out through the exhaust valve, making the exhaust stroke. When the piston reaches the head end, the exhaust valve is closed and the engine is ready to again take up the first stroke.

This series of four strokes constitutes a complete cycle and produces one explosion, hence the name "four cycle" which is applied to engines operating on this principle.

The hit and miss governor, which is used on most four-cycle farm engines, is a device arranged in such a way that the speed of the engine is automatically maintained by controlling the number of explosions; that is, the engine takes an explosion only when needed to maintain the speed. Thus if the engine is running a machine requiring but little power the engine will take an explosion and run along for some time before another explosion takes place, but if the engine is pulling a heavy load rapid successive explosions occur.

The several systems used in cooling gasoline engines are air, running water and hopper cooling. In the hopper cooled, the cylinder is surrounded by a jacket which is kept full of water. Large water ways are provided between the outside of the cylinder wall and the jacket to insure good circulation and perfect cooling. Like a tea kettle, so long as you keep the hopper full of water there is no danger of overheating the engine. In cold weather the water in the hopper can be drained and in the morning hot water put in. This hot water warms the cylinder walls and makes it very easy to start the engine. If it is not convenient to drain the hopper then use calcium chloride, as this will prevent the freezing of the cooling water.
—Farmers' Review.

THE SIX RULES FOR FIRE PREVENTION

1—Matches

Be sure your match is out. Break it in two before you throw it away.

2—Tobacco

Throw pipe ashes and cigar or cigarette stumps in the dust of the road, and stamp or pinch out the fire before leaving them. Don't throw them into brush, leaves or needles.

3—Making Camp

Build a small camp fire. Build it in the open, not against a tree or log or near brush. Scrape away the trash from all around it.

4—Leaving Camp

Never leave a camp fire, even for a short time, without quenching it with water and then covering it with earth. See 1914 Hunting License.

5—Bonfires

Never build bonfires in windy weather or where there is the slightest danger of their escaping from control. Don't make them larger than you need.

6—Fighting Fires

If you find a fire, try to put it out If you can't, get word of it to the nearest U. S. forest ranger or state fire warden at once. Keep in touch with the rangers.—U. S. Department of Agriculture forest service.

Fashions change, and changing conditions bring changes in farming methods the same as in everything else. On the old Glenn ranch, which is now a part of the Jacinto unit of the Sacramento valley irrigation project in Glenn County, some of the largest capacity combined harvesters ever operated were developed. They were the symbol of the most extensive form of farming ever known in California. Now grain that has been grown on the same land is being harvested with small self-binders and will be threshed with small threshing machines. There are now 50 or more families, with schools, churches, societies and all of the things that go with a successful farming community on the same area that was at one time handled from a single "camp" that was a scene of great activity at plowing, seeding and harvest time time only.

You can't always tell how much mind a man has from the length of time it takes him to make it up.

A PROBLEM

The problems of a certain Sacramento Valley farmer at this time may be of interest to others—and it is possible that some of our readers may be able to make helpful suggestions.

Our friend has a good irrigated 40-acre farm and is farming some land on shares beside. He has planted considerable orchard, and is caring for it well, so that his prospects for the future are good—if he ever gets to that future without going broke. He has made some payments on his place, and has passed the stage that some newcomers find themselves in when they cannot raise feed enough for their stock. He understands farming—and more than that understands farming under California conditions. He will have an abundance of feed, grain and hay, this fall. If feed prices were high he would be able to sell and make enough to meet his payments and other obligations. At present prices the margin he would receive above labor bills would be very small.

Now what he feels that he needs to do is to provide storage room for all of this feed and later buy stock and feed it, in the belief that he can in this way get $6 or $8 or perhaps $10 or more per ton for his hay—and better than present grain prices for his barley.

Now his fear is that should he be able to borrow the money to provide barns for storage—when and how will he be able to pay this back? And if he gets the feed stored where will he be able to buy stock to feed at prices that will make him a profit?

Here is a rural finance problem that we will be glad to have discussed.

FRED L. BORUFF'S
Mission Olive Nursery
"NATURE GROWN TREES"
One, two and three years old. Variety and quality guaranteed.
"The olive is the best paying fruit grown in California"
FRED L. BORUFF San Fernando, Cal.

WATER PIPE
ALL SIZES
Hot asphaltum dipped, new threads and couplings; 2nd-hand in name only. Prices far below your expectations. Screw casing and standard pipe fittings and valves.
The Exclusive Pipe House.
PACIFIC PIPE CO. Main and Howard Sts., San Francisco

Marketing!!
That's the Problem
It matters little whether you have to sell a carload of corn-fed steers, or a bushel of onions, the problem is before you. And you must meet it. Here's a concrete illustration:
Why Is It So?
"When the farmers of Kansas are feeding Elberta peaches to their swine, rather than to haul them to a 15-cent market, the housewives of Chicago and the great Northwest are paying one dollar a peck, $3.50 a bushel, for the fruit."—A news item.
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Established 1889. Twenty-fifth Year.

The California Cultivator

Rural Californian combined with the California Cultivator

A Journal of Horticulture and Agriculture

By

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SOME CORN

The July crop report issued by the bureau of crop estimates shows forecasts of 2,390,000 bushels of corn for California. The average for the past five years, that is, 1909-13 inclusive, was 1,745,000 bushels. The average per acre in California is materially above that of the Middle West or the corn states but, of course, production costs more in California because of the necessity for irrigation. The estimate for the entire United States, expressed in bushels, is 2,920,000,000, while the average production for the past five years was 2,708,334,000. So not only in California, but the country over, a substantial increase is to be noted. If these forecasts are correct another step will be taken towards discouraging financial stringency.

HIGHWAY BULLETIN.

The state highway commission is issuing a quarterly highway bulletin. There are many questions of interest to the public which this highway bulletin will answer, and we understand a copy will be mailed to any taxpayer who will write to its editor, Rialto Building, San Francisco.

PEANUTS IN KINGS

We note in a dispatch from Hanford that peanut buyers are signing with farmers of that section to grow peanuts. Possibly conditions in Kings County are such that peanut growers can make their salt, but we think they will do well to plant lightly until they have tested the matter. With Japanese competition, American peanut producers of the southern part of the state have practically entirely gone out of the business.

POTATO MOTH.

California is producing some of the finest potatoes in the world. Many other sections are asking for these potatoes, and, as for many years, hundreds of carloads are being shipped out. The situation has been seriously complicated this year by the tuber moth, not that this is the first year it has existed, for it has been in the state a score of years, and many think that it is not only in this state but in many others, some of which have now quarantined against California potatoes. Be that as it may, the quarantine has been laid, and it is feared it may be laid by other states. In order to prevent this, state and county commissioners are using every effort to see that only perfect potatoes are shipped out. Inspection is now made of every car going out of the state.

HORTICULTURAL SOCIETY

Why is it that the greatest horticultural state has no general organization of its horticultural interests? This question is asked frequently, though not so often in more recent years as it was 10 or a dozen years ago. The answer usually given is that the state horticultural commission has conducted gatherings which have given opportunity to the horticultural interests to enter into discussions which have influenced legislation and to a degree protected horticultural interests. This has also been true of some farmers' clubs, which while organized locally have had a state wide influence. But is there not opportunity for usefulness for a regularly formed organization?

When the matter has been suggested in the past the statement has been made that as the state horticultural commission conducts these meetings, bearing all of the expense and in addition issues a report containing all of the discussions and addresses, there is no necessity for the growers to take unto themselves this expense. But for the past few years Horticultural Commissioner Cook has acted under the belief—and we believe correctly—that the principal mission of his office is policing and attending to quarantine measures which affect fruit and productive interests generally. This is the one duty before the commission; there is no other body in the state to enforce our horticultural laws. The responsibilities along this line have greatly increased during the past few years and now require the united energies of a large field and office force. Investigational matters have been turned over almost entirely to the state university, and this is as it should be, for its equipment is perfect, or becoming perfect, along these lines.

Under these considerations has not the time arrived when there should be a great growers' organization which may draw upon both these and other interests for help in protecting the fruit industry and yet represent it in legislative and other general matters? Especially may we not call attention to legislative matters. There should be some organization on watch. The state commission and the state university are, of course, a power in this line, but neither of their interests are so general as would be those of a larger organization, including all factors of horticultural work.

It may be said that any action of the state fruit growers' convention, which usually meets semi-annually, represents the larger fruit growers interests. But while this gathering has at times used the words, "State Fruit Growers' Association," it has done so without authority, for there is no such association; any one who has chosen to attend the conventions has been a "member," or at least a voter, and on certain occasions in the past these "voters' have not represented fruit interests. There are no dues and no officers other than that the state horticultural commissioner is ex-officio director and his secretary has acted as secretary of the convention.

New York and several other fruit growing states have powerful organizations of horticulturists. The annual dues are one dollar, or simply nominal, and for that the annual report is sent to each member. Other dues are received from life members. The reports have become classics as to horticultural matters in the states in which the societies exist. These societies are representative of the growers only and give a feeling of "ownership" and of interest which a state-controlled body cannot.

As noted, the California horticultural commission has issued reports of meetings until the last two sessions, and Dr. Cook has announced that he will also be unable to issue a report of the coming convention to be held in Los Angeles. In addition the policing or quarantine work has been such a drain upon the funds of the state commission that it is now unable to bear the expenses attendant upon the ordinary convention. The expenses of the last convention were borne by the supervisors of Yolo County; the expenses of the coming convention will be assumed by Los Angeles County and City. This saves to the state horticultural commission more funds and enables more thorough quarantine work, but is it fair to communities which may be unable to pay out sufficient money to secure a meeting of the fruit growers, yet perhaps need the inspiration of a great state meeting? Of course to the two counties mentioned it has been no burden.

In addition, we may say that there is a legislative committee representing fruit and agricultural interests generally, which is discussing the introduction at the coming session of the state legislature of a measure which will unite the state horticultural commission, the state agricultural society, in fact all the state activities which have to do with agriculture, under one organization with one directing head. If such a measure should go through it will be added reason for serious discussion among horticulturists as to how best their interests may be looked after.

These are merely hints which may open the way for a discussion which could profitably be taken up at the coming Los Angeles convention. Is there not need for a great California Fruit Growers' Association?

Agricultural News Notes

Dairying is being rapidly developed in India.

Fruit canning is becoming popular in South Africa, especially Natal, which is creating a good market for canning outfits.

The United States consul at Valparaiso states that fairly good riding horses in Chile sell as high as $100 United States gold, and the poorer grades as low as $40. Coach horses are valued at $100 to $200.

The total receipts of cattle at the principal markets is considerably less than one year ago. It is apparent that people are eating less meat, but there is nothing to indicate that meat prices will ever be much lower than at present.

The seaweed industry is an important one at Havre on the coast of France. Many varieties are gathered. They are used green or dry for fertilizer, for the extraction of iodine and potash, as filling for mattresses and for packing.

An international meteorological congress, under the patronage of King Victor Emanuel of Italy, will be held in Venice on September 17, 18 and 19, 1914. The object is to assemble students of meteorology of the world to study and discuss all phases of the subject. Communication and discussions will be made in French, English, Italian and German.

The improvement of Philippine citrus fruits has been accorded special attention by the department of agriculture. Some 65 named varieties of citrus fruits, including oranges, mandarins, pomelos, lemons, limes and citrons have been imported from the citrus growing regions abroad, and these are also being propagated at the Lamao experiment station for distribution to Philippine planters.

The orange crop of the present season in the Valencia district of Spain is estimated to have been short some 150,000 cases, though these figures are somewhat more favorable than was expected at the time of the abnormal cold snap in January of this year. What is perhaps more important in relation to the crop is that many thousands of cases of inferior fruit, sold probably at prices lower than those which usually rule, have been sent out.

A concerted effort, backed by the government of the Philippines, is being made to substitute corn for rice as an article of diet among the people of the islands, the bureau of education being engaged in a campaign of teaching the people how to grow and use this cereal. As a result, during the last two years, there has been a marked increase in the production of corn. In 1913 the crop was estimated at 15,000,000 bushels, with a value of $12,300,000.

What is stated to be the largest transmitting station in the world has recently been completed at Cefndu, near Carnarvon, Wales, and will be formally opened within a few weeks. When the station is opened direct wireless communication will be established between the United Kingdom and the United States. Hitherto a marconigram handed in at London had first to be sent by land line to Clifden on the west coast of Ireland; thence it was transmitted to Glace Bay, Newfoundland, whence it was sent to the United States by land line. The new station will communicate direct with the station in New Jersey, just outside of New York.

Agricultural News Notes of the Pacific Coast

Northern California

Sonoma County blackberry growers dry many of their berries.

A number of students are still taking work at the university farm at Davis.

The Corning Olive Growers' Association now has its own packing house.

The tentative date for the Sebastopol Gravenstein Apple Show is August 10.

Thirty cars of pears, plums and apples left Sacramento the night of July 7.

About 1000 acres of land have been planted to beans this year in the "basin" near Arbuckle County.

Farm Adviser Lyons of San Joaquin County met the farmers at Lodi and discussed the alkali problem.

Corning olive growers state that their crop this year will probably exceed last year's by at least one-third.

A model dairy is to be installed at the state hospital at Stockton. Purebred Holsteins will be purchased for the dairy.

A new feature at the Ferndale fair will be Automobile Day on September 10. The fair will be held from the 7th to the 11th.

A special class has been formed at the state fair for boys' pig clubs, cash prizes and ribbon awards being offered as in other live stock classes.

The Colusa County Swine Breeders' Association has formulated plans to induce swine breeders of other parts of the state to organize similar associations.

Early peaches shipped from Lodi are reported as bringing very satisfactory prices, because they have the early peach market practically to themselves.

The board of directors of the Sonoma and Linne Counties' District Fair has determined to offer $3000 in cash prizes for live stock at the coming fall fair.

A duly organized farmers' protective league reports that farmers all over the state are enrolling as members to take part in the fight against the eight-hour bill.

Complaint has been made to the interstate commerce commission that the railroads are charging excessive rates on fruits from California points to Seattle and Vancouver.

The newly organized Feather River Highway Association has started an active campaign for better roads in Northeastern California and has arranged to have all principal roads marked for the benefit of travelers.

The report of the California Fruit Distributors on June 29th showed the following carload shipments of green fruit: Cherries 166, apricots 374, peaches 255, plums 797, pears 34. The total is almost double the shipment of 1913.

At the recent meeting in San Francisco of the California Live Stock Breeders' Association it was decided to open offices of the association and establish a salaried secretary in charge. The association also endorsed the work of the farmers' protective league, which was recently organized to lead the fight against the eight-hour bill.

Central California

The beet sugar factory at Visalia is reported in readiness for slicing.

Canneries of Dinuba have contracted for most of the peach crop.

The agricultural fair opens at Salinas, Monterey County, August 1st.

In connection with Fresno's county fair will be held horse, dog and poultry shows.

A general fair is being agitated for Tulare County instead of the usual citrus fair.

La Honda, San Mateo County, is becoming known as a cheese manufacturing center.

The Alta district of Tulare County shipped out 40 carloads of melons on one day last week.

The heat of the past few days has ripened peaches so fast that there will be many small sizes.

The county supervisors of Madera have appropriated sufficient funds to secure a farm adviser.

The Fresno district fair will be held September 29 to October 3. The floral exhibit will be held the first two days of the fair.

The Turlock cannery has put up 25,000 cases of apricots, a record pack for that concern. The peach pack will begin about July 20th.

The San Jose grange was addressed at its recent meeting by Dr. Leroy Anderson on irrigation systems and dairies along the Sacramento River.

The producers' association formed by farmers at Patterson, Stanislaus County, has taken on new life and a campaign is being made for new members.

A strong branch of the farmers' protective league has been formed in Tulare County. W. Sims of Farmersville has been chosen president of the county association.

The Porterville Citrus Association has chosen the following directors for the ensuing year: H. C. Carr, F. D. Bailey, W. P. Bartlett, V. D. Hutcheson, John Orr, H. F. Brey and W. E. Sprott.

The California Associated Raisin Company states that during the month of May, 1905 tons of raisins were shipped from the state, as compared with 903 tons during the same month last year.

The new building of the Madera Cooperative Creamery Association is practically completed and it is thought it will be ready for work by July 20th. It will be able to care for milk of 5000 cows.

A mass meeting was held at Lindsay, Tulare County, last Saturday to take preliminary steps toward the formation of cooperative associations of growers throughout the county to cheapen and facilitate the fumigating of citrus trees to eradicate soft brown scale.

The recent Holt Manufacturing Company picnic, held near Stockton, called out an attendance of almost 4000 people. The festivities were started with a great parade through the streets of Stockton of nearly 700 workmen from the manufactory, with 27 automobiles and tractors, including one 75-horsepower and another, the baby of all Caterpillars.

Southern California

Santa Ana's sugar factory begins slicing July 20th.

The old lima bean growers' association has been formally dissolved.

Neighbours, in the Palo Verde Valley, is assured a new cotton gin.

Pony refrigerators of ripe Calimyrna figs are being sent east from Indio.

The Ventura County Fair Association has arranged its program for the next fair.

The Hog Raisers' Association of Imperial Valley met in El Centro Saturday, July 11th.

Ventura County bean growers are glad of a change to warm weather because of the beneficial effect on the crop.

A walnut crop of 10,529 tons is the estimate of the California Walnut Growers' Association for the 1914 output.

Grape growers of Heber, Imperial County, say that they will have a bigber yield than ever before from their vines.

The Santa Fe railway estimates the output of fruit canneries in California this season at between 15,000,000 and 20,000,000.

The California Fruit Growers' Exchange has begun a nation-wide campaign of advertising of the Sunkist and Redball brands.

Citrus growers of Bloomington, San Bernardino County, recently met in mass meeting to inaugurate a campaign against black scale.

The Covina Valley Farmers' Club held its last summer meeting the last Saturday in June. No gatherings will be held during July and August.

So far this season the Pomona Fruit Growers' Exchange has paid out to members $550,000. There are yet about 60 cars of oranges to be shipped.

Orange packers of Orange County met at Anaheim last Saturday to arrange for the disposal of cull oranges so that they may be kept off the local markets where they are in direct competition with better grades.

The Portland and Seattle markets want their cantaloupes without paper wrappers. In damp weather the paper-wrapped melons are the first to show decay. Better prices are paid for the unwrapped product.

According to the figures of the Coachella Valley Date Growers' Association over 5000 date offshoots have been imported this season. A few of these went to Arizona, but most of them were planted in the Coachella Valley.

The sugar refineries of Southern California have inaugurated a campeign of education to demonstrate to housewives that beet sugar is as good for all purposes as cane sugar. The product is to be henceforth known not as "beet sugar," but "Southern California sugar."

Up to date there have been issued under the new automobile license law in California over 104,000 licenses. This places California next to New York in number of cars, the latter state having about 122,000, but California stands first in per capita automobiles. California has one automobile to each 23 persons, while New York has one to every 74.

The Coast

Cantaloupes of the Salt River Valley of Arizona cover 2000 acres.

Arizona's state fair will be held during the week of November 9-14.

The Portland, Oregon, market reports the price of hogs as falling off five cents.

Over 471,000 head of live stock were inspected by the Live Stock Sanitary Board of Arizona during 1913.

Odessa, Washington, has a new creamery. It has sufficient capacity to care for cream from 600 cows.

The fruit exchange at Kennewick, Washington, has received $10,000 for this season's shipments of cherries.

Alfalfa growers in the country about Methow, Washington, are happy over getting up their first crop without rain.

Over 65,000 acres of grazing land in Alberta, Canada, has been leased by a Montreal company for breeding cavalry remounts.

Bounties offered by the live stock sanitary board and state veterinary board have been declared illegal by the supreme court of Idaho.

The creamery at Eugene, Oregon, has become the property of the Farmers' Creamery Company, a cooperative association composed of 200 dairymen.

The Walla Walla Valley Swine and Cattle Breeders' Association will hold its first annual swine sale at the Walla Walla County fair grounds September 16.

Experiments in growing sugar cane have been successful in the Salt River Valley of Arizona. The factory at Glendale has installed machinery for crushing cane.

The Wenatchee Valley Fruit Growers' Association of Washington is offering cash for green deciduous fruit. The association takes orders from buyers and guarantees quality of fruit delivered.

Following is the latest estimate of Yakima Valley tonnage for 1914: Cherries, 24 cars; apricots, 11; prunes, 120; peaches, 1112; pears, 475; grapes, 35; melons and cants, 300; apples, 5950; mixed cars, 600. Total, 8627.

The Senate has approved expenditure of $200,000 for starting work on the Wapato irrigation project on the Yakima Indian reservation. This assures placing water on 60,000 acres and providing storage supply for another 60,000.

Fruit and vegetable growers of Washington, Oregon, Idaho and Montana will meet in a by-products convention at Portland, Oregon, September 10. At this time they will listen to a report of the cooperative by-products committee of the National Apple Show Association.

The first apples of the 1914 season grown in the Northwest reached Spokane from the Kennewick district. There were 50 boxes in the consignment, which was made up entirely of Yellow Transparents. They were shipped in small peach boxes, yet realized from 75 cents to $1 a box, a record price for the quantity. They were sold through the North Pacific Fruit Distributors.

LARROWE'S
DRIED BEET PULP
TRADE MARK REG U. S. PAT OFF

Nature's Gift
to Dairymen

A TRULY WONDERFUL FEED

Larrowe's Dried Beet Pulp is the pure shredded root of the sugar beet, with only the sugar and water extracted; dried, sacked and ready for shipment in one hour from the time the beets enter the factory. It is clean, healthful, succulent, and cannot ferment or sour if kept in a dry place.

Larrowe's Dried Beet Pulp improves the health and increases the flow of milk. It furnishes more succulence than silage, greater digestibility, an abundance of carbohydrates—and is just what is needed with alfalfa to make a perfectly balanced ration.

Larrowe's Dried Beet Pulp is uniform in color; never blackened or burned. It is light and bulky; swells to about six times its original bulk when moistened. Cattle take to it ravenously.

Order a sack from your feed dealer today and try feeding it to one cow whose milk record you know—and watch results.

Write for booklet—"Profitable Feeding," with feeding instructions and information.

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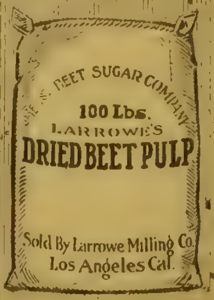
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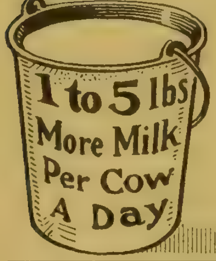
ORDER FROM YOUR DEALER NOW



Larrowe's MOLASSES-Dried Beet Pulp is preferred by many feeders on account of its sweetness. Just the plain beet pulp with beet molasses dried. Splendid for fattening; also for horses.

You Wouldn't Put Axle Grease on Your Watch

Isn't it almost as ridiculous to use ordinary farm oil on your cream separator? It's delicate mechanism demands a special oil. We make good harvester and gas engine oils, but we do not recommend them for separators. If your separator is to do its best work, you must lubricate it with

Standard Hand Separator Oil

It is made especially to suit the peculiar mechanism of cream separators. It is of just the right body. It does not "gum." It keeps the bowl running swiftly and smoothly—you get *all* the cream. There is no better oil—regardless of price. Dealers everywhere.

Standard Oil Company
(California)

PRACTICAL MILK HOUSES

(Continued from page 51.)

Fig. 2 shows a milk house in Imperial valley, constructed to meet the needs of that rigorous climate. This is about 8x12 feet in size and 8 feet in the clear. It is set up from the ground about two feet for two reasons as explained by the dairyman. He believes the interior can be kept cooler by having the free passage of air underneath and the floor kept drier and more free from odors. The floor is of concrete laid four inches thick on boards and joist. He says the elevation gives better drainage—the waste being carried in a pipe beneath the ground to a covered cesspool in the porous soil some distance to the right. The house is well ventilated and well screened.

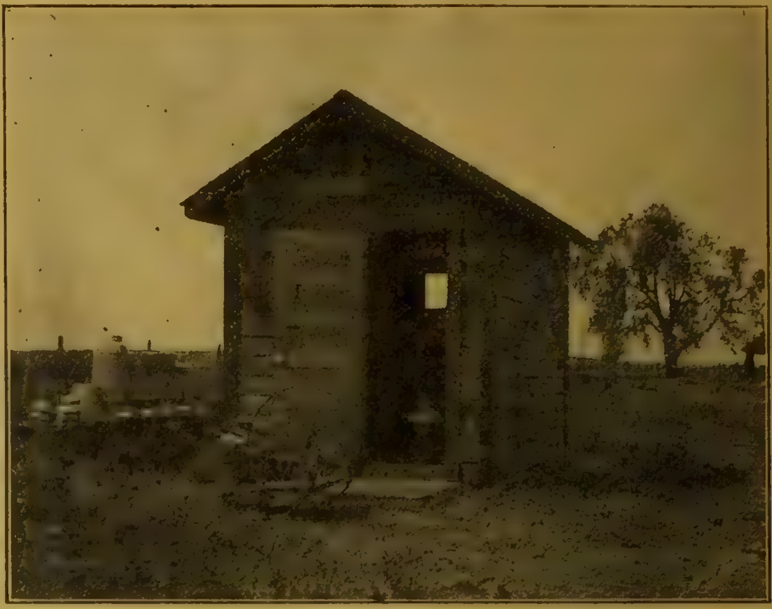


Fig. 1

The water in the foreground is a typical Imperial valley "well." An excavation of convenient size and depth is made with team and scraper. Water from a near-by irrigation ditch is turned in to fill the "well." After standing a few hours, much of the Colorado river sediment has settled to the bottom, and then the galvanized iron tank is filled by means of pumping. Again the water is permitted to settle when it is drawn off for use in the dairy, in the house or for stock.

Figs. 3 and 4 are photos of two milk houses, the former near Gridley, Butte County, and the latter near Willows, Glenn County. There are larger and more expensive than the first two illustrated. I did not see the owners to obtain cost, but would estimate Fig. 3 to cost about $150 and Fig. 4 $300 or more. The Gridley house is not ceiled inside, while the Willows house has a thick double wall, giving an ample air space. It is also ceiled overhead and painted inside and out. In the end to the reader's left is a room with insulated walls, to be used for ice, as the owner plans to make butter at some future date. The smokestack is from a two-horse power boiler used to provide steam for cleaning purposes. The fuel is coal.

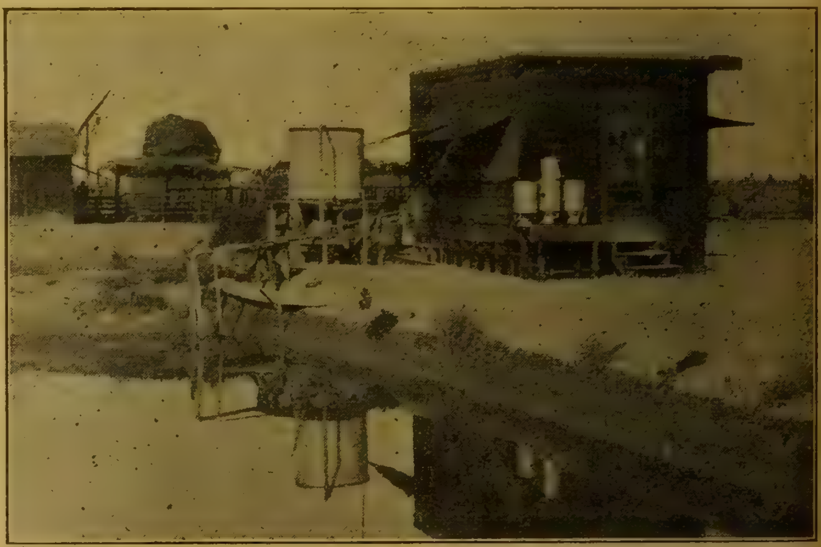


Fig. 2

Ventilation is very important in the milk house, especially in the interior of the state where the summers are very warm. The houses which are open and screened on four sides seem to be best arranged and more free from odors. In a milk house in the Los Molinos district I found the owner using burlap instead of wire screen and it was giving good service. The burlap admits light and air and excludes flies and more dust than wire screen. The room was clean and free from odors and I see no objection to burlap screen when one has not the money for wire screen. Clean barley sacks answer the purpose and furnished the screening at this place.

Equipment.

The equipment of the milk house is simple. If cream is sold there must be a separator of such capacity as the size of the herd demands, also a vat for receiving the milk, elevated enough to allow the milk to run into the separator. If the separator is operated by hand the vat needs to be large enough to hold an entire milking, for usually it is the milker, or one of the milkers, who furnishes the power. If, however, the milk is brought from the dairy in cans instead of in buckets as milked, then the vat need not be so large. And there must be a wash sink for rinsing and washing cans and buckets. Galvanized iron sinks standing on iron legs are best and most sanitary. The milk receiving vat may be supported in a similar way. Dairy supply houses give illustrations and prices of all such.

The cream must be cooled to as low a temperature as possible, as it comes from the separator. There are many devices for this, but I have seen no cooler better than one devised by John Guill, Jr., of Chico and made under his direction by a local tinsmith. Fig. 5 shows its construction. One great advantage of this cooler is that it is short in length, thus requiring little room, the total length being only 13½ inches. Yet the cream from the separator spout to the can travels four feet over a cold water jacket, which brings the cream very nearly to

Warranted to Give Satisfaction.

Gombault's Caustic Balsam

Has Imitators But No Competitors.

A Safe, Speedy and Positive Cure for Curb, Splint, Sweeny, Capped Hock, Strained Tendons, Founder, Wind Puffs, and all lameness from Spavin, Ringbone and other bony tumors. Cures all skin diseases or Parasites, Thrush, Diphtheria. Removes all Bunches from Horses or Cattle.

As a Human Remedy for Rheumatism, Sprains, Sore Throat, etc., it is invaluable. Every bottle of Caustic Balsam sold is Warranted to give satisfaction. Price $1.50 per bottle. Sold by druggists, or sent by express, charges paid, with full directions for its use. ☞Send for descriptive circulars, testimonials, etc. Address

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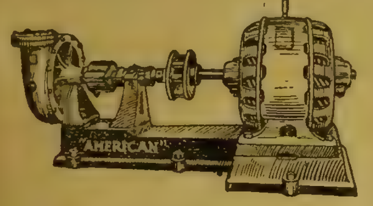

More Water—Less Power

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the water temperature. The water intake is by a three-fourths inch hose connection, and the outlet, a three-eighths inch tube (brass), insures a constant supply of water inside. The water jacket underneath is divided through the center lengthwise as shown by the dotted line in the top view so that the water must flow the entire length of the cooler. The extension of the cream space at the outlet is convenient for resting the cooler on the cream can and insuring it against slipping. The cream outlet is indicated, but shown only by dotted line, as neither view allows the full opening to show. The divisions in the cream space are four inches long by five-eighths inch high and the open space at the end of each four-inch division is three-eighths inch. The whole cooler is made of heavy tin, except the water intake and outlet, which are of brass.

The usual provision for keeping cream cool up to the time of shipment is to set the cans in cold water. Where there are only one or two cans, many use any ordinary tub, but for more cans a special water tank is better. One dairyman, just beginning operations near Willows, built a concrete trough in his milk room, which is the first story of the tank house. He has arranged a water circulation direct from the pump, while the overflow goes to the garden for irrigating.

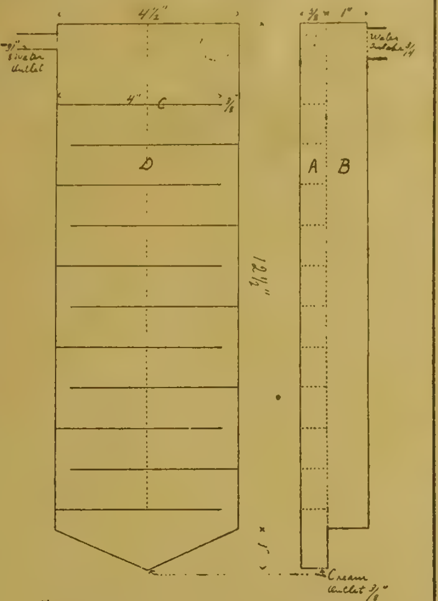

Fig 5 Top and side view of cream cooler
A Cream space divided by tin partitions C
B Water jacket divided through center 'D'

Fig. 5

Moral—Make the water do all the work you can.

If milk is sold, it must be cooled as soon as possible after milking. This means a cooler, and probably the coil coolers having a stream of water continually pouring through them are best. The cooler is placed alongside the wall, high enough to allow the milk to flow from it into the proper cans, vat or bottle filler. Above the cooler must be a receiving vat in addition to the distributor attached to the cooler. It is well to arrange for milkers to pour the milk into this vat from outside the room or building. The strainer is placed outside with a long spout running through the wall to the receiving vat. The milker ascends to the elevation by means of a few steps surmounted by a platform about a yard square. Such an arrangement keeps much dirt and many flies out of the milk room.

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I have said nothing about the Babcock milk tester as a part of the milk house equipment because the up-to-date dairyman is going to be a member of a cow testing association and have his cows tested regularly by a man hired for that purpose.

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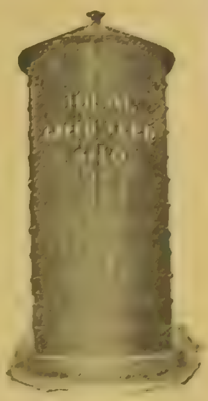

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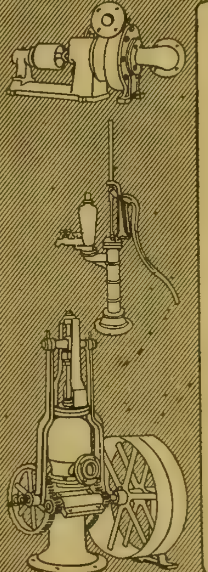

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This list of helpful, instructive and interesting books is prepared by us with the purpose of enabling the Cultivator readers to supply themselves at the lowest possible cost. The great value of many of these is so well known as to need no comment from us. Some of the new books which we have added to the list this year deserve special mention. "Co-Operation in Agriculture," by G. Harold Powell, should be in the hands of every producer of farm products. "Farm Sewage," by Santee, will aid many in solving a perplexing problem. "Farm Manures," by Thorne, is decidedly valuable. We state sincerely that no orchardist can afford to get along without "The Pruning Book," by Bailey. We have had much inquiry for a book on keeping farm accounts—we can supply a good one now. The imported book, "Insecticides, Fungicides and Weedkillers," by Bourcart, is a marvel of completeness. The rapidly increasing use of gasoline engines, automobiles and tractors by the farmers has demanded reliable treatises on these subjects. "The Gasoline Engine on the Farm," by Putnam, "The Modern Gasoline Automobile," by Page, and "Traction Farming and Traction Engineering" are exceptionally complete, well illustrated and easily understood. Don't overlook the "Cement Workers' Handbook"—it's "worth its weight in gold." Every book on this list has the endorsement of the California Cultivator.

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Irrigation and Forestry

FIRE PREVENTION.

Saturday, April 18th, was named by Governor Jonhson as fire prevention day. As one of the steps in making the day of more value to pupils in the public schools, State Forrester G. M. Homans issued a 12-page bulletin on Fire Prevention Day, A Lesson. It is a good lesson and should be learned by all the pupils of California. Those who did not learn of it in the public schools should write Forester Homans for a copy. This is the time of year when every precaution should be taken to prevent midsummer fires in forests, in fields, and even in the homes and farm buildings.

We quote one page of this bulletin giving some facts regarding California and the necessity for protection.

1. The total acreage of land surface in California is 99,898,880 acres. Texas is the only state larger than California.

2. There are approximately 20,604,000 acres of forest land in California.

3. There are nineteen national forests in the state representing a total area of 12,104,000 acres.

4. There are approximately 12,786,306 acres of merchantable forests in California.

5. There are 8,500,000 acres of these merchantable forests privately owned.

6. California has no state forests; several states have.

7. The forests outside the national reserves are very poorly protected from fire because California has failed to let the people make a law that is necessary.

8. Forest fires result in the loss of human life, public improvements, timber, little trees that would some day be big ones, game, homes, orchards, live stock, forage and plants from which bees get their honey:

9. The length of the fire danger season in California is from May 15th until October 15th. This means that everything is so dry during this period that fires will easily start unless every one is careful to prevent them.

10. The six rules which should be remembered are:

(1) Be sure your match is out before you throw it away.

(2) Knock out your pipe ashes or throw your cigar or cigarette stump where there is nothing to catch fire. Better yet—don't smoke.

(3) Don't build a camp fire any larger than is absolutely necessary. Never leave it even for a short time without putting it out with water or dirt.

(4) Don't build a camp fire against a log or tree. Build a small one where you can scrape away the needles, leaves or grass from all sides of it.

(5) Don't build bonfires. The wind may come up at any time and start a fire you can not control. Never play with matches.

(6) If you discover a fire, get word of it to the nearest state firewarden or forest officer or the land owner as quickly as you possibly can.

Learn and remember and practice these rules and you will be a valuable citizen.

11. California has not set aside a single dollar for forest protection. The United States government wants to help us but will not until our state does something to help herself.

12. Every one can help by urging that California as a state adopt a fire protection plan.

13. The state must pass the most suitable kind of forestry laws and provide enough money to work out the laws.

14. It is especially important to keep fire patrols in the woods during the summers.

15. During 1913 in California 61,812 acres of merchantable forests were burned over. This represents a money loss of approximately $124,059.

16. The total money loss occasioned by forest fires in 1913 in California, including damage done to houses, timber and pastures, amounted to $511,077. This amount of money is enough to pay for protecting the forests for several years and we have allowed it to go up in smoke.

GREAT SALT LAKE PRESERVES TIMBERS.

In replacing a railroad trestle recently burned along the north shore of Great Salt Lake, engineers have just found that the piles are still perfectly sound after 43 years of service. Looking for the cause, since these were only of local pine and fir, they found the timbers impregnated throughout with salt from the lake.

At another point on the lake, 18-inch piles, set 29 years, are similarly preserved with salt which has penetrated to their very center. Timbers in the Southern Pacific trestles across Salt Lake, placed in 1902, appear to be as good as on the day when the piles were driven. They have been preserved well above waterline by the salt dashed onto them by the waves, a fact apparently anticipated by the engineers who built the trestles.

The first transcontinental telegraph line, built before the railroad, extended west from Salt Lake City through the prosperous mining camps of Eureka, Austin and Virginia City. When the railroad was built, the telegraph line was transferred to follow its right of way and the old poles sawed off at the ground. An engineer who recently examined the butts left in the ground in the salt desert near Fish Springs found that although fifty years had passed since the poles were cut off the old butts were perfectly sound.

Telephone and electric companies in the Salt Lake Valley used the local salt for preserving poles. When set up, about 75 pounds of salt is placed around the pole in the ground. This method cannot be used, however, when the pole is on or near the lawn, or in any place where vegetation is desired.

It is pointed out that the reason why the waters of Salt Lake act as a strong preservative, as distinguished from ocean waters, is because the lake water is so much saltier—being practically a saturated solution. Preservation with salt is of no use in ocean piling against the attacks of teredos and other marine borers.

Experts in the forest service who have been investigating the preservative treatment of timber offer the suggestion that ties and poles which have been immersed for some time in the waters of the lake ought to be impervious to decay if the salt is not leached out by the action of the elements. It has been suggested that this can be guarded against, for example, by painting the butt of the pole with a coat of creosote which will keep out the moisture and keep in the salt.

And he gave it for his opinion, that whoever could make two ears of corn or two blades of grass to grow upon a spot of ground where only one grew before, would deserve better of mankind, and do more essential service to the country, than the whole race of politicians put together. — Dean Swift.

To be always fortunate and to pass through life with a soul that has never known sorrow is to be ignorant of one-half of nature.—Seneca.

The automobile has many uses on the farm. It is more than a pleasure car. It is a real implement that pays a dividend every year.

Turlock, Stanislaus County, has 3000 acres in melons this year.

Profit in the Poultry Yard

THE TRAGEDIES OF THE POULTRY YARD

So much is being written of the profits of poultry raising, is it not well occasionally to take the other aspect of the case? The little chicks that overeat or jump into water pails, or whose cruel mothers discard them and pick them to death?

The writer, following the slogan, "Back to the soil," has taken up ranch life with a vengeance, and the poultry yard is no small item.

One neighbor says, "Feed the little chicks on coarse, yellow Indian meal mixed as dry as possible with water or milk." Another expert says, "Never feed corn meal to either chicks or turkeys. It kills them."

Now, from my limited experience I think it at least does chickens no harm. I have had them grow and nourish on corn meal. But I believe it would kill turkeys—turkeys seem to have delicate stomachs while they are young—and when they grow up they still present their problems.

We hatched ten fine little turkeys from three turkeys and a gobbler that were hatched a year ago. After this first brood came off we set 30 more eggs, all of which proved infertile. Is there any reason for this?

To fill up the gap made by these failures I bought 25 little incubator turkeys and played mother to them myself for one week. My days were spent running about the alfalfa bed to keep them lively, and by night I would have the brightest, heartiest, little turks one would want to see; but the nights proved too much for the little birds, and one or two were dead every morning. Finally I induced one of the hen turkeys to mother the little orphans, and now the remaining dozen seem to be thriving fairly well.

My gobbler is getting bunches on his legs.

Can the Cultivator explain why these hard bunches of muscles appear? We have oiled them with vaseline, but with no apparent results.—J. M. P., San Fernando.

It is as hard to generalize about the feeding of chickens as about that of children. Some will thrive on anything, some are "thrown off their feed" by the slightest irregularity. Corn meal, mixed with water, was the chick feed of our grandmothers. The fact that some chicks have thriven upon it doesn't prove that it is a good ration. In our grandmothers' day chicks ran at large and balanced their own ration. Intensive poultry keeping has made more careful feeding necessary. Try the Cornell ration for your next chicks. It is: three pounds corn meal, three pounds bran, three pounds middlings, three pounds beef scrap, one pound ground bone. This is perfectly balanced and has proved very satisfactory wherever used.

Corn meal or corn in any other form is always dangerous for turkeys before they "shoot the red" at about three months of age. So many people have learned this by sad experience that it is not necessary for us to experiment. Whole wheat, cracked wheat, and rolled and steel cut oats are the best grain feeds for poults. After three months some corn may be given, but it is not necessary till fattening time.

Infertility is sometimes the result of inbreeding, but more often of an overfat condition of the breeding stock. Sometimes eggs are infertile because the tom is immature; sometimes because the breeding stock is too closely confined or improperly fed. Breeders need a good deal of green feed, especially grass. The male need not be over ten months of age, but he must be strong and vigorous.

You exerted yourself unnecessarily to keep the incubator turks "lively." That was just what they did not need. I don't say it killed them, but young turkeys are weak and slow in motion at first and need to be kept quiet. This is one reason why chicken hens are not the best mothers for them, they fuss too much. Turkey hens are quieter. It is very difficult to raise turkeys artificially unless you have a very good brooder and poults enough to fill it. They require more heat, if anything, than chicks, and will pile up in the warmest corner of the brooder in spite of all you can do. Even now I see my six weeks' old poults cuddling under the mother hen's wings when the wind turns cool in the evening, while chicks half that age are taking care of themselves. Had you given your poults to the hen in the beginning they would have done better.

If the bunches on your gobbler's legs are at the joint they are probably caused by rheumatism, and rheumatism is always due to dampness somewhere. See first of all that your adult turkeys roost high and dry. They need no shelter in summer and only an open shed in winter. Any good liniment may be used externally. For internal use Mrs. Mackay, one of the most successful eastern turkey breeders, recommends this preparation: "Get elder bark and scrape off the outside skin, cut in small pieces and put in apple vinegar. It does not matter how much bark you put in, but the stronger it is the better. Put in a half gallon fruit jar and add a piece of alum as large as a walnut and the same amount of copperas. Put in the jar all the bark you can get in, pouring the vinegar over it. Put enough of this liquid in the drinking water to make it taste of acid, but not enough to be unpleasant to the taste." A little tincture of iodine in the drinking water is good as a tonic.—J. A. K.

FACTS ABOUT EGG FORMATION

By T. E. Quisenberry.

For some time the pathological department of the Missouri state poultry experimental station has been observing abnormal eggs and facts as to their cause, significance, etc.: 36 abnormally small eggs were recently examined; 25 contained yolk or some part of yolk, five contained blood clots, three contained particles of chalazea, one contained a hard lump of albumen, one a normal yolk, one contained a ruptured yolk and no albumen.

The small eggs were laid in the regular course of laying, the greater number of the hens laying the day before and the day after, two laying the same day. The common idea is that when a hen lays an abnormally small egg that the hen has laid her clutch and is going broody or else it was the first egg laid by a pullet. This idea is incorrect for, as a rule, the hens which lay small eggs lay regularly both before and after laying the small eggs. The facts are, that any object getting into the funnel of the oviduct will stimulate the oviduct action so that it is moved down the oviduct, causing the albumen and shell to be placed around it. In certain yards at this experiment station on April 28, 1914, 1068 eggs were laid. On the night of April 28th there were 27 soft shelled eggs laid, or an average of about one egg to 40 hens in these same pens. Of the 18 hens which we know positively laid soft shelled eggs, 12 of them laid on that date, the day before and the day after, showing that the soft shelled egg is laid in the regular course of laying, between hard shelled eggs. With regard to the soft shelled eggs, there are many theories advanced such as the lack of egg shell forming material, overexertion on the part of the hen or of her egg organs, inflammation of oviduct, etc. The tests made here indicate that a lack of shell forming material such as shell, grit, etc., is not always the cause of soft shelled eggs. They may have imperfect shells, but a lack of material will not produce a soft shelled egg one day and a hard shelled egg the day before and the day after. It is interesting to note that principally during the day is nature's time for the movement of the egg through the oviduct, and at night the egg rests and receives the shell in the shell forming section. For this reason the soft shelled eggs are laid in the fore part of the night, and the harder shelled ones later in the night. The records of 24 double yolk eggs were kept. Six of the hens did not lay the day before, but laid the day after; eight of the hens laid the day before, but did not lay the day after; nine of the hens laid the day before and the day after; one hen laid only one egg during the month. Some of the double yolks were contained in one chalazea, while some of them were in separate chalazea. In eight large eggs containing two yolks which were examined, six eggs contained yolks which were the same size. In two, one yolk was smaller than the other. In three the yolks were in the same chalazea. One of the largest hens in the contest is a Plymouth Rock and weighs eight and one-half pounds and has laid 12 eggs, or not quite one and one-half eggs to every pound of her body weight. One of the smallest hens in the contest is a Campine and weighs one and one-half pounds and has laid 103 eggs, or nearly 70 eggs to every pound of her body weight.

FEATHER EATING

Many people have trouble with their fowls forming a habit of feather eating, which is much more annoying than one may think. This habit is usually confined to fowls that have small runs, but it sometimes happens where they have large range. I have seen fowls quite naked of feathers and in summer they will pick one another until they bleed. Some think that certain breeds are worse feather pluckers than others, but in my opinion one breed is just as bad as another.

There are several causes and remedies. The most common cause is insects and vermin. The fowls pick at themselves and in doing this they pull their feathers out. Then in a few days the pin feathers begin to grow and the feather pluckers observing them, with the moisture which consists principally of glutinous matter, peck them out also, and in this way keep the fowls quite bare.

The first thing to do to effect a cure, is to at once remove the feather eaters from the rest and place them in a pen by themselves. If they are left with the others they will teach them the habit too. They can be readily discovered by watching for them, out of sight, when the sun is shining and the fowls are pluming themselves.

Often when a feather plucker is shut up in a pen for two weeks it does not go back to the habit when returned to the flock, but if it does, it is well to shut it in a run with another bird well covered with carbolated vaseline, or any such ointment. It need be only applied to the parts the hen in question usually attacks. If this does not take effect I advise killing the hen, unless a very valuable bird; but if the latter, cut or file away the edges of both mandibles, so they will not close tight for one-eighth inch or so back. In this way the bird can eat readily but cannot hold a feather. Oftimes, lack of exercise and green or animal food causes feather plucking.

It is a good plan to feed sulphur in the mash when one sees the hens starting. In a very confined run give the birds all the occupation possible. —Successful Farming.

Perhaps the wages of farm help are no higher now than they were 20 years ago when everything is taken into consideration, but that is a thing that might adjust itself. The real question is: How long will it be possible to get hired help at any price?

The Summer Season

Don't expect to cram for eggs in the fall without preparation during the summer.

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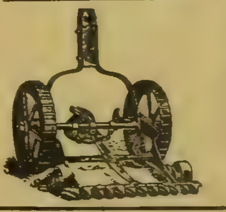


THE CLIPPER
There are three things that destroy your lawns. Dandelions, Buck Plantain and Crab Grass. In one season the Clipper will drive them all out.
Clipper Lawn Mower Co.,
Dixon, Illinois

Mediation
did not settle the war in Mexico and it will never settle the successful war being waged by
DEVIL'S DUST
On Lice, Mites and Vermin
At Your Dealers or
Peerless Poultry Supply Co
409 E. Third St. LOS ANGELES

Questions and Answers

THE EDITOR AND STAFF

Questions to be answered in this department should be received at this office one week before reply is expected. Write plainly on one side of the paper and sign full name and address. Unsigned communications receive no attention.

Black Eye Bean

I am a recent settler in Ventura County and am interested in the bean known as the "black eye." Although great quantities of this bean are raised in this county, I have so far been unable to find any one who can definitely tell me where the crop goes and for what purpose it is used. Every one I have asked says that the black eye bean is not much used as a table food. Some say it is used to adulterate cheap coffees, others say used in making giant powder, and one man told me that great quantities are sold throughout the country as "salted peanuts." I will greatly appreciate some authoritative information as to where, how and for what purpose the black-eye bean is marketed.—Subscriber, Fillmore.

The black eye bean is used to a very large extent as a food. Colored people especially seem to take to it, but perhaps its largest use is as seed for green manure crops. As to its use in adulteration of coffee, we are informed that this is sometimes done, but as a commercial proposition this makes but a very small outlet for beans. It is also supposed to be used as a filler for giant powder, but this use is also very limited. As to use in production of salted peanuts, we are not informed; we will secure information along this line if possible. The best part of the black eye bean proposition is that wherever it has been produced it has always sold at fair prices. It is, however, safest to produce in carload lots in order to be sure of securing a purchaser at a good price. If one grower cannot plant to that extent, others should unite with him. Price to producers usually ranges between three and four dollars per hundred pounds.

Scaly Leg

I have a few young turkeys that have a scale all over their legs from feathers to feet. They roost with Plymouth Rock chickens. What is the cause of the scale and what can be put on their legs to stop the scale and have their legs smooth at marketing time?

Wash the legs thoroughly with soap and water, using a stiff brush. After drying, apply the following ointment: Four teaspoons washed sulphur, 20 drops carbolic acid, two tablespoons vaseline. Mix thoroughly and rub the legs well with this. In bad cases this should be repeated in a few days. Kerosene will destroy the scales, but it also spoils the color of the leg. Scaly leg is always caused by filthy yards and houses, but it is quite contagious and will be passed on from fowl to fowl after the filth which caused it has been removed. Infection also comes from roost poles where infected fowls have roosted, and these should be painted with lice killer or with kerosene and crude carbolic acid. Keep your turkeys away from the chickens. They are far more susceptible to filth and prefer roosting out of doors.—J. A. K.

Summer Ration

Will you kindly advise through the columns of your weekly in regard to feeds for chickens: At present I am feeding the following ration, but I believe it could be improved on: Dry mash before the fowls at all times consisting of 25 pounds bran, 10 pounds shorts, 10 pounds ground oats, 5 pounds corn meal feed, 5 pounds beef scrap (prepared), 5 pounds alfalfa meal, sprinkling of charcoal and salt. In the evening I feed wheat. Fowls have oyster shell and grit before them. Am getting very few eggs, though hens laid well this spring. They seem rather fat. Practically all are White Rocks. Please publish ration for laying hens, growing pullets, roosters for market or consumption.—Subscriber, Pasadena.

If your hens have been laying well for a good while, it is time for them to let up a little, still, being Rocks, they are probably fatter than they should be. The ration is too fattening for a heavy breed in winter and too heating for summer. In this climate Rocks and Orpingtons will put on flesh if they are given corn or corn meal. Try this ration for the layers the rest of the summer; three parts bran; one part oat chop, one part alfalfa meal, half part fish meal, half part good beef scrap, a little fine bone meal, charcoal, ground oyster shell and salt. It is a good plan to close the dry mash hoppers at night and keep them closed till noon. Feed wheat or wheat and oats or soaked rolled barley, which is cheaper than usual just now, at night, and plenty of green at noon. Some experts give their hens during the summer a hopper of coarse fish scrap and another of bran, and give no mixed mash at all.

Growing pullets must be kept growing, and if they have plenty of exercise a little corn meal will not hurt them. A good mash mixture for pullets three months old and over consists of 20 pounds bran, 10 pounds cornmeal, 10 pounds middlings, 10 pounds beef scrap and a little salt and charcoal. As they approach laying maturity a little linseed meal may be added a part of the time, but care must be taken not to force the pullets. With this mash is used a grain ration of cracked corn, wheat and oats. Sprouted oats are preferable to dry and a most excellent growing feed, as are both skim milk and sour milk.

A good ration for broilers consists of 10 pounds bran, 25 pounds cornmeal, 25 pounds middlings, 25 pounds ground oats, 15 pounds beef scrap. This should be moistened with water, or better still, skim milk, and fed three times a day. There is no "best" feed.—J. A. K.

Broom Corn

Is broom corn produced in California? To what extent, and is it a profitable crop?—Subscriber, Los Angeles.

There is considerable broom corn produced in this state, some of it is most excellent. There are three producing sections. About Sacramento some seven or eight cars are produced. In the Tulare Lake section of the San Joaquin Valley, about the same amount. In the Imperial and Coachella Valleys in Southern California some four or five carloads. Broom corn, like ordinary maize, requires rather a high temperature both day and night. Near the coast or in altitudes where the nights are cool best results cannot be obtained. The production, per acre, under proper conditions, amounts to not far from a ton, after which the second crop or short broom is secured at the rate of about one-half ton per acre. It is now somewhat late for this season's planting, though June and early July are the best planting months. It is planted rather thickly in rows two and a half to three feet apart. The close planting is to induce fine branches of the broom. Two or three irrigations are required. When the corn is about 10 inches high it is thinned and irrigated. This is, of course, cultivated in and afterwards light harrowing is given to prevent crust forming on the surface. Harvesting is done when the seed is in the "milk." The harvesting is done by breaking at the first joint below where the broom branches. After this, other stalks are sent out, which gives the finer, higher priced second crop. The seed costs the farmer about 10 cents per pound, but the amount required is so infinitely small that cost of seed is not a factor.

Grafting Over Peaches.

I have three acres of three-year-old peach trees. They are freestones, and I wish to change to cling variety. Would it be more profitable to bud or to replace with new trees? When the trees were planted they were supposed to be Lovells, but suppose it a mistake of the nurseryman. Do you think they would replace the trees or could I recover damages?—Subscriber.

We do not believe it would pay to attempt to work over a bearing peach orchard. Certainly not, unless one who understands grafting and caring for trees after they are grafted has the matter in hand. The grafting over of an apple orchard is a comparatively small matter, but none of the stone fruits take so kindly to this process. We believe that nurserymen generally make a reservation in selling nursery stock that they will be responsible for trees which are not true to name only to the extent of the original purchase money. Loss of time and cost of bringing an orchard to bearing will not be compensated for. It depends, however, somewhat on the bill for the sale of these trees which the subscriber accepted.

Gophers and Squirrels.

The popularity of the automobile should be increased by the following, which comes from Mr. M. C. Allen, a Cultivator subscriber at Pomona. The auto has often served to churn the cream, pump the water and rock the baby, now it comes in as a gopher and squirrel exterminator. The suggestion of Mr. Allen seems to be a good one, and we believe it will make quick work in disposal of these pests

"Are any of your readers troubled with gophers or squirrels? If so tell them to put plenty of lubricating oil in their automobile so it will smoke when the engine is running, attach hose to exhaust pipe, place the other end in gopher's hole, pack dirt around it and start engine. Look over the field and if smoke comes out anywhere stop it. You can kill more gophers or squirrels in half a day than you can in a month with poison and traps.

Mediterranean Flour Moth

I send a flour sack in which I had bread wrapped. You will find on it some exceedingly small worms. The can in which the bread is kept is scalded every week and a fresh sack put in and still the pest remains. It burrows in the bread and is a great nuisance.—Subscriber, Ventura.

Examination of these "worms" under a strong glass showed them to have a head somewhat like a borer. The insect was so small as to be almost invisible. It was referred to Secretary Essig of the state horticultural commission and in his absence Mr. Leroy Childs writes:

"These are the immature larval forms of the Mediterranean flour moth, Ephestia kuehniella Zell, all of which I find are dead. This insect is of wide distribution and often occurs in such numbers as to be a serious pest in flour mills, where it takes advantage of all cracks and out of the way places, making control by cleaning up almost impossible. It feeds upon almost all produce of grains and is often found in the household. We would suggest in controlling this insect a thorough cleaning out of any old flour sacks, mush boxes and the like, that might possibly be in a kitchen, and also the complete sterilization of bread can and wrappings that may be placed about the bread. Perhaps a cloth placed over the covering when a lid is placed over the can would aid in keeping out the pest, if the young have taken up their abode in inaccessible places. The brood, however, will soon be hatched and the trouble will be over."

Beans in Warm Valleys

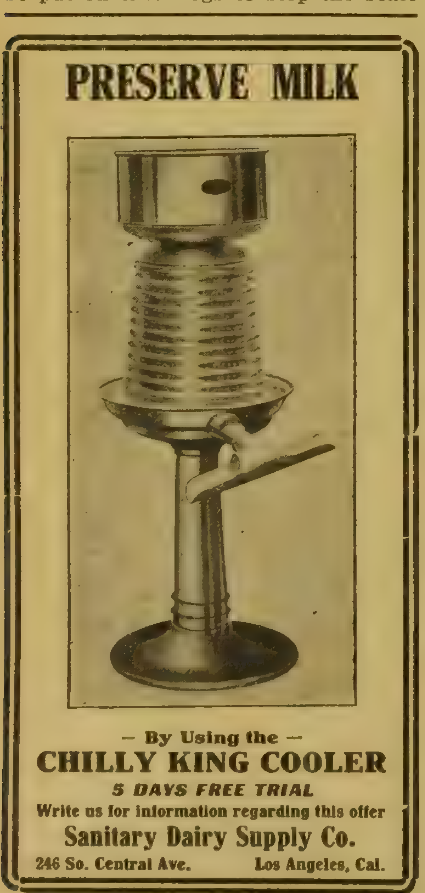
Can beans be grown successfully in the Perris Valley? If so, where have they been grown, what varieties and with what success?—Subscriber, Fullerton.

The Black Eye or any bean which will grow well under arid conditions should give excellent returns in the Perris Valley. A new bean, or rather one of the oldest beans known, but new to California agriculturists, is the Tepary, which has been furnished to the world by the Arizona experiment station. These beans have been grown under desert conditions by Indians of Arizona since long before a white man came to that state. The experiment station has made tests and find they are one of our very finest beans and will do well under the hottest conditions.

Pollenizing Feijoas

I have a feijoa that blooms, but never fruits. Are they self-sterile and should other trees be planted near to insure fruit? Are guavas self-sterile and how close together should they be planted?—Subscriber, Watsonville.

Mr. D. W. Coolidge of Pasadena writes: "We do not consider the feijoa self-sterile, on the contrary our most productive plant stands a long distance from others. The guavas are self-sterile without a doubt. It is true, however, of both feijoa and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246 So. Central Ave. Los Angeles, Cal.

guava, that some plants blossom freely and yet do not set fruit. I have never been able to define the cause of this." Guavas are usually planted either as a hedgerow or in rows six to eight feet apart and three to five feet apart in the row.

Feed for Cow

I recently bought a fine Jersey cow and have tried to be careful in feeding her, but am told she can eat anything without harm. I have a few vegetables from my garden, such as squash, cucumbers, potatoes, etc. Will it be all right to feed those to her? Can you give me a good ration for a milk cow?—Subscriber, Inglewood.

Cows are somewhat like humans in their requirements. That is, the feed which will be best for one cow is not always best for another. The Jersey, as a rule, does not take so readily to roughage as do some of the larger breeds, but excepting turnips we would not hesitate to feed green stuff from the garden. If fed immediately after the milking we do not believe there would be any unsatisfactory flavors and possibly it might be the means of securing larger milk production than where the cow is fed on dry hay ration. As to best ration, that will depend upon the possibilities of your own section, excepting that alfalfa will probably be the cheapest foundation of the rations. Concentrates or mill feeds are usually rather expensive for profitable return, especially when alfalfa is as low in price as at present. Soiling crops, such as corn, planted thickly and cut green, make an excellent addition to dry alfalfa.

Chickenpox.

Our chickens are sick, or at least they go blind in one and sometimes both eyes, and bumps are formed about the eyes. They want to eat but seem to grow worse. What is the trouble?—A Subscriber.

If subscriber will send his name, which he did not sign, we will be glad to forward copy of the Cultivator of November 20, 1913, in which Mrs. Koethen describes the disease of chickenpox and its treatment.

Transferring Insurance.

I wish to know in regard to household goods which were insured in one county and later moved to another and burned. They were insured for three years in Los Angeles County, and on moving to this county they were burned a few weeks since. My insurance does not expire until 1915. —Subscriber, Tulare County.

We fear our subscriber will be unable to collect any insurance on the goods. Household goods are always insured in a certain building, the location of which must be definitely given and the insurance ends the moment they are moved from that particular building unless the policy holder has taken the precaution to go to the office of the insurance company and ask for a transfer. This is a very simple matter and costs the small fee, we believe, of 25 cents.

Castor Beans.

Can you give information as to the growing of castor beans and whether it would be profitable to grow on a commercial basis in the Salt River Valley? Is there a castor oil mill in this section?—Subscriber, Higley, Arizona.

We do not know of any mill now in operation. Many canyons of Southern California are filled with rank growing castor beans, which at one time gave such promise to the oil industry that mills were established. However, the cost of gathering the beans was such that we believe the mills have all ceased operation. It is a crop for cheap labor and waste land. We do not think there is any opportunity whatever for profit in the cultivation of this crop.

Veterinary

Answers in this column by Dr. Wm. Petrie, 2714 South Harvard Blvd., Los Angeles, are without charge. For immediate mail answer remit $1.00. In writing questions give full symptoms or particulars of injury of animal.

Worms.

I have a cat that has been bothered with diarrhea for the last two months. He is thin, but eats well. I find that he is passing small white worms, fully half an inch long and about the size of a cord.—Subscriber, Brawley.

Have your druggist prepare the following: Pulverized areca nut two drams made into 12 powders. Give one powder in a little milk every morning. Also get ten three grain tablets of santonin and give one every night. We would like a report on this in a month.

Horse Out of Condition

My horse was recently seriously affected with colic or other disease and has only partially recovered, in fact, is very much out of condition. His coat is rough, he seems to be stiff; when he walks his joints crack. What is the trouble with him, and what may be done to cure this condition?—Subscriber, Azusa.

The stiff joints following the colic would indicate a rheumatic condition. It will take some time and a long course of treatment to cure him. Get the following powders and give as the druggist directs: Nitrate of potash, four ounces; acetate of potash, four ounces; salicylate of soda, three ounces; bicarbonate of soda, three ounces, and nux vomica, two ounces. Mix and make into 24 powders. Give one powder morning and evening. Would also advise giving him one pint of raw linseed oil and one ounce of turpentine twice a week for three or four weeks. See that he gets plenty of water to drink.

Bloody Milk

One of our cows, a Jersey and a heavy milker, has been giving bloody milk out of one teat for about a month. She eats well, but is very thin. Can you tell us what the trouble may be and suggest a remedy?—Subscriber, Tulare.

Take two pounds of epsom salts and one pound of common salt, mix them and give a handful once a day. Rub the quarter that gives the bloody milk for several minutes every time you milk her and be sure that you milk her clean. Would suggest that you have her tested for tuberculosis.

Scratches

I have a mare that has the scratches (at least that is what the veterinarian here calls it). She has had it for five or six months and I have been unable to find anything to effect a cure. Cracks open under the fetlock on both front feet.—Subscriber, Lindsay.

Clip off the hair and wash the parts clean just once. Then apply twice a day a lotion of chloride of zinc, one dram to the pint of water. Get your druggist to put this up for you and I would advise you to get a gallon of the mixture. Pour out half a teacup of the lotion and warm it before applying.

Loco Disease

What is good for a locoed horse? What causes loco? How do animals act?—Subscriber, Corning.

The loco disease or trouble is caused by a horse eating a weed that grows on the plains and near the mountains of the southwestern part of the United States. It has a peculiar action on the brain and no one has ever found a remedy for it. The animal appears stupid and at times takes crazy spells similar to blind staggers. No two of them act exactly alike, but there are symptoms in all of them that show that the brain is affected. They generally grow worse and in a short time die in a fit or spasm. Some linger for a long time and are serviceable at times, but you cannot rely on them. The disease is hard to describe or explain, but once you become familiar with it you will soon recognize it.

MONEY MAKING LITTLE LINERS

In this department we will insert your advertisement under a classified head for 12 cents per line per issue. No ad accepted for less than 3 lines. Our classified columns are the clearing house for our many thousand readers.

MACHINERY

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RANCH MACHINERY
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We Manufacture New Galvanized Tanks,
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1000 gallons, $19.50, 2000 for $29.50. Header, fine shape, $125; Champion Binder, $75. Whittman Power Baler, Mowers, Cultivators, Harrows, Plows, Sundries.

ENGINES

To 40 H. P., not the 10 per H. P. kind, but engines that will do the work. Pumps and Pump Fittings

HOW'S THIS?

Biggest little Pumping Outfit ever sold at the price, 2½ H. P. Horizontal engine, upright jack and belt, new, $98. Capacity, 1200 gallons 100 feet. Demmitt Co., upstairs, 120 N. Main, Los Angeles.

We have pumps, motors and engines of all sizes and for all conditions, which we will sell or rent. If you want a complete plant or any part, write us your needs and get our prices. Can give you special low price on engine and automobile oil, also belting Machinery & Motor Exchange, 756-768 S. Alameda St., Los Angeles, Cal. Main 6382.

For Sale—Used and new gas engines, 2 H.p. up, rebuilt and fitted with modern equipment. 22 years' experience enables us to repair and rebuild gas engines correctly. Get our prices. Lloyd, 806 N. Main, Los Angeles.

MISCELLANEOUS.

Free for Six Months—My special offer to introduce my magazine "INVESTING FOR PROFIT." It is worth $10 a copy to anyone who has been getting poorer while the rich, richer. It demonstrates the REAL earning power of money, and shows how anyone, no matter how poor, CAN acquire riches INVESTING FOR PROFIT is the only progressive financial journal published. It shows how $100 grows to $2200. Write NOW and I'll send it six months free. H. L. Barber, 430, 28 W. Jackson Blvd., Chicago.

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Perfectly equipped
propagating plant,
fine opening for an
all round man. Plenty
of deciduous and olive
budding.
Box 63, Rialto, Cal.

LIVE STOCK

Ohio Improved Chester White (O. I. C.)—A few male pigs of March and April farrow. Everything else sold Have a limited number of sows bred for October farrow. Am booking orders now for these. All stock cholera immune. Crated and registered free. C. B. Cunningham, Mills, Sacramento County, Cal.

Grape Wild Farm Thoroughbreds—Guernsey Bulls of A. R. Breeding. BERKSHIRE HOGS. Finest herd in the state. All ages for sale. A. B. Humphrey, proprietor, Mayhews, Sacramento Co., California.

For Sale—Small dairy complete; retail route; income $375.00 per month. Price, $2,500.00. Half cash; balance terms. Sickness; must sell. C. A. M., Box 361, Azusa, Cal.

Thoroughbred Berkshire Boars of all ages from developed and large-boned hogs. Riccomi Bros., Mountain View, Cal.

For Sale—Young, registered Berkshire boars; fine, strong stock, weighing about 150 lbs. Stanislaus Ranch Co., R.F.D. No. 1, Crows Landing, Calif.

Glenview Poland China—Stock for sale. Chas. R Hanna, R. F. D. No. 3, Riverside, Cal.

N. H. Locke Co., Lockeford, Cal.—Choice young Jersey bulls for sale.

Poland China Stock for sale, boars and gilts, D. M Clark, Arlington, Cal.

SEEDS AND PLANTS

Luther Burbank Spineless Cactus (Only)—Live stock fed on this velvet cactus, grow fat; hens lay more eggs, cows give more and better milk, and horses grow sleek. Why not get a start in the best, costs no more to raise than that which they call just as good. Ten slabs for $5.00, with one fine fruiting sort free. Address or call at H. L. Bauers' Cactus Nursery, 4401 Hammell St., Los Angeles.

If you want choice varieties of Burbank's Spineless Cactus, address Mrs. Mary R. Miller, Lakeside, California.

$ $ $ $pinele$$ Cactu$. All varieties Burbank's fruiting and forage plants 10c up. Plant now. Black Bros.' Nursery, 455 Lucas, Los Angeles. $ $ $

Berry Plants and Rhubarb. My new Berry Book ready about October will be worth sending for. Louis F. Scribner, R. F. D., Pasadena, Cal.

Thornless Cactus Slabs for sale at 5 to 15 cents each. Chas. R. Hanna, R. D. No. 3, Riverside, Cal.

WANTED.

Wanted—A married man 30 to 40 years of age, one with a knowledge of lemon and orange groves and horses. He must also understand irrigating and the care of a gasoline engine. This will be a steady position with privileges and salary satisfactory. Give your experience and references, address and phone number. Adress C. N. A., care Kennebec Hotel, Long Beach, Cal.

Poultry or Fruit—Young man, single, age 26, desires by Sept. 1st, responsible position on commercial poultry farm. Agricultural College training; ten years' experience. Would consider opportunity to learn something of the fruit business if work for winter is guaranteed. References furnished. State wages. G. Monteith, Box 135, Clint, Texas.

FARM LANDS FOR SALE.

For Sale—Springhill ranch, 160 acres, 50 acres has been plowed and are level enough for a heading machine. Plenty of water, wood and fencing, some crops in this year, 50 young trees, 75 table grapes planted this ranch, some fruit on place. Four room California house all furnished. Good well near the door [illegible] Horses, wagon, [illegible] chickens and bunch of rabbits. [illegible] miles from Los Angeles, good county road, from 75 to 100 autos pass daily. First place east of Summit, Bouquet Canyon. Place goes as it is for $8,000. The water is worth $6,000, but I am going to sell or trade for I can't live alone. Agents take note. Some cash, some trade and [illegible] tion. First class for fruit. Address D. N. Parker Palmdale, Cal.

For Sale—Fifteen acres, two miles from Martinez, 26 miles from Oakland, opposite R R station, five minutes walk to school. Twelve acres in fruit. Peaches, grapes, cots, cherries and almonds balance truck garden. Alfalfa and hay, two wells, wind mill and two large water tanks. Water piped to house and chicken yard. Seven-room house, large barn, fruit packing shed, chicken houses, brooders, etc. Five hundred choice laying hens, [illegible] young chicks, 2 horses, 3 wagons, harness, farming vehicles, etc. Price, $8,000. This property is on main road, very convenient, [illegible] increase in value; $5,000 cash, balance 7 per cent interest. Address R. C. Jones, R. F. D. No. 1, Box 35, Martinez, Cal.

VICTORIA, AUSTRALIA, WANTS SETTLERS

Special inducements; government land, railways; free schools; cheap irrigation; 31 years to pay for farms adapted to alfalfa corn, grains, fruit, etc.; climate like California, ample markets; reduced passages, special excursion next November. Free particulars from F. T. A. FRICKE, Government Representative from Victoria, 687 Market St., San Francisco, Cal., Box X.

For Sale—26 99/100 acres, 2 year old vines, Carignan and Golden Chasselas; 2500 8 year old vines, wine grapes, principally Alicante Buschet; 230 tills yearly almonds; small family orchard; good water, two dwelling houses, large barn, 16 tons hay, farming implements. On electric car line. Price, $18,900; half cash, balance interest 6 per cent. Pine Creek Road. C. A. Tarwater, R.F.D. No. 1, Concord.

For Sale—Twenty acres adjoining prosperous town, one water stock in Mutual Water Co. with each acre Conceded to be the best beet and alfalfa land in the state. About 600 feet from the station and beet dump. Five-year beet contract if desired. Price, $200. M. G. McNeely, Alpaugh, Tulare Co., Cal.

We offer 200 colonies bees and fixtures with or without 5 acres land suitable for berries, poultry, etc. Cash or easy terms of payment. Will lease for several years with privilege to buy if satisfied. Particulars on request. Spencer Apiaries Co., Box 14, Nordhoff, Cal

Florida Land—Three Months Free—Subscription to the Indian River Farmer. For truckers, fruit growers, citrus, general farmers and folks who want to know about Florida. Address INDIAN RIVER FARMER, Department X, Vero, Florida.

Apple Orchards—Large and small, in the only apple producing section in California. The greatest section west of Missouri River. Write for booklet. Geo. W. Sill & Co., Watsonville, Cal.

Ranches, homes, acres, lots, exchange; send for free list. Wilson Bros., Santa Cruz.

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is a wonderful help during the molt.

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Poultry Wanted—We pay the highest market price for all the local poultry we can get, no matter how large the quantity; also fresh ranch eggs. We remit immediately. National Poultry Co., successors to Allaway & Layton Co., 607 E. Third St., Los Angeles, Cal.

Barred Rock Cockerels (Hawkins' Royal Blue Strain) ready for fall mating. All the popular breeds of baby chicks every week after Aug. 15th. Order early and avoid the rush. Enoch Crews, R. 1, Santa Cruz, Cal.

Baby Chicks—Jumbo egg strain. White Leghorns, $9; best Anconas, $12; Brown Leghorns, $9; White Minorcas, $12 per 100. Sand Ridge Hatchery, Kerman, Cal.

Barred Rock and R. I. Red baby chicks. If you want to raise some broilers send me your order. Price $10.50 per 100 until September 15th. J. W. Lyon, Gardena, Cal.

White Minorcas—The most popular utility breed of today. Prolific layers of large white eggs. Baby chicks, $12 per 100; eggs. Order early. E. Cauble, Kerman, Cal.

Barred Plymouth Rocks — "None better." Special prices for May and June. Write for 'em. C. H. Vodden, Los Gatos, Cal.

TREES.

For Sale—One and two-year-old Washington Navels and Valencia Orange Trees. Eureka Lemons and Marsh seedless grapefruit, for Spring 1914 delivery. Write for prices, or call and examine stock at Morris Citrus Nurseries, Cor. Juanita and Valley Center, R. F. D. Box 34, San Dimas, Cal.

The 1200-Acre Nursery, growers of 1500 varieties of trees and plants. OREGON NURSERY CO., Orenco, Oregon. Sales office, 522 Chamber Commerce, Los Angeles, Cal.

000 Avocado Seedlings—Pots, also can furnish nice plants, bare root, at low price. A. A. Quint, R. D. No. 2, Pasadena, Cal.

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Citrus Nurseries, Murphy Oil Company, East Whittier, California. Selected stock for sale; inspection invited.

You Future Nurserymen—Write for prices on special stocks of plants to start business with. Ballou's Nursery, Pasadena, Cal.

Budded Citrus Trees and seedlings at fair prices. Will take auto or land. J. P. Butler, Jr., P. O. Box 145, Lamanda Park, Cal.

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New Zealand Reds, prize stock, young for sale; buy now and raise for the winter shows. Mrs. C. A. Richey, R. F. D. 8, Box 557, Los Angeles.

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Flavor Your Cooking by the Drop — Not by the Spoonful

Alcono Pure Food Flavors are made from pure oils, free from alcoholic adulterations and will mix with cold water. Four to eight drops of Alcono will do the work of a teaspoonful of the old kind of flavoring extracts.

25c per tube. 6 tubes any flavor $1.25 — postpaid.

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Household Department

The House of God.

Where the great winds are loud about the moors,
And the stars beacon, and the sun endures;
Where the armadas of the clouds set sail,
And lyric waters shout adown the dale,
Where flowers make redolent the vernal sod,
Here is the House of God!

In highways and in byways of the earth,
Where there is kindliness and simple mirth,
Where hands touch hands, and lips to lips are set,
Where there is sorrow, and wan eyes are wet—
Where little children smile and beck and nod,
Here is the House of God!

—Clinton Scollard in Delineator.

THE YELLOW PERSIAN

(Concluded from Last Week)

The golden gleam of the rising sun was just kissing the tops of the Sierras next morning when Miss Bessie Lorimer wended her way to the poultry yards to supply the needs of her little flock. The day before she had accompanied her father on a visit to an old friend and the hour of their return was later than anticipated, so while prone to lie abed this morning, remembrance of her neglected poultry compelled an early rising.

As she fitted the key to the spring lock and swung the door ajar, she was startled to note the disarray within. To retreat was her first thought, but curiosity and courage triumphed and she tiptoed silently to the wall of sacks and peered cautiously down. One swift glance showed her the intruder and she retired to the door with beating heart,

But that brief glance had revealed the fact that the man was either sleeping or dead—she was not sure which, so hesitatingly she stole back for another look.

She saw a long-limbed, blonde young man and snuggled under his arm, a big yellow cat, both sound asleep. As the girl's eye traveled down the man's figure she noted that he was without shoes. And yet he did not look like a burglar or a tramp. His clothing was good and well made and he generally presented an appearance of prosperity out of place in one who would choose such a place for a lodging.

The situation puzzled her and she determined to keep the young man a prisoner until she knew more about him. To this end she was stealing softly from the building when she came face to face with her father, who, noticing her startled look, exclaimed:

"Why, Bess, what's the matter?"

Motioning him to silence, she pointed to the pile of sacks. Mr. Lorimer, a middle-aged man of stocky build and genial countenance, at once proceeded to investigate the miniature fort on the floor of his store-house.

A vigorous shake aroused the enemy, who, thus rudely awakened from slumber, found himself looking straight into a pair of entrancing brown eyes that returned his gaze with interest and some alarm.

"Well, young man, what have you to say for yourself?"

These words in a stern male voice, accompanied by a firm grip on his collar, convinced Bob, however, that he had another and more to be feared antagonist than the pretty brown-eyed girl before him, and he had, besides, the additional disadvantage of being so placed between the sacks of his impromptu couch as to be unable to defend himself, or even to get a good view of his questioner.

The yellow Persian, in the meantime alarmed at the disturbance, was anxious to escape and was only prevented from doing so by the proximity of Miss Lorimer to the door.

"Don't let that cat out! Close the door, ma'am, please."

Bob's tone was so authorative that the girl obeyed instantly, the while she cast upon the young man a glance of mingled inquiry and indignation.

"Now, young man, I am still waiting for an explanation of your presence here?" and the vigorous hand that held Bob's collar emphatically seconded the owner's voice.

"Pardon me, sir, but if you will kindly release the pressure on my throat I will have more breath for the explanation that is undoubtedly due you. As you see, escape is impossible with the door so ably guarded."

And the young man gravely bowed to his captor's daughter.

"I'll take care of that myself, young man," said Mr. Lorimer, promptly placing himself with his back against the door. "Now go ahead and spin your yarn."

This Bob proceeded to do, giving a whimsical account of his proceedings of the previous day and concluding with a recital of how he had been trapped in the store house.

"And" he continued, "it occurs to me that you have placed yourselves in the same predicament by closing that door."

"Not at all, sir," said the girl. "As you see, the door opens readily. It has a spring lock opening with a key from the outside only, but on entering I always take the precaution of stopping the catch on the inside. By the way, you speak of your sister. What is her name, may I ask?"

"Mrs. Donald Rogers."

"Why, are you Dorothy Rogers' brother?"

"I certainly am," said Bob, with a grin.

The girl burst into a merry laugh and even her father's usually genial countenance relaxed much of the sternness that gentleman had thought proper to assume on discovering an intruder on his premises.

"And does Dorothy know where you are?" said the girl, still laughing.

"Why, she knows I'm in the neighborhood somewhere."

"I'll go and call her up at once and see whether you are missing. If you are really Dot's brother she will be very uneasy about you."

"Do so, daughter, and I will keep guard over this young man until his identity is fully established."

In a few minutes the girl returned and laughingly confirmed Bob's story and immediately her father became profuse in his expressions of regret at the annoyance to which Mr. Hastings had been subjected and insisted on his coming in to breakfast.

"We have often heard of you, Mr. Hastings, for Bessie and your sister are bosom friends."

"I should say we were," seconded Miss Lorimer, "and Dot has often promised us your acquaintance, but we never expected to make it in such an unconventional manner."

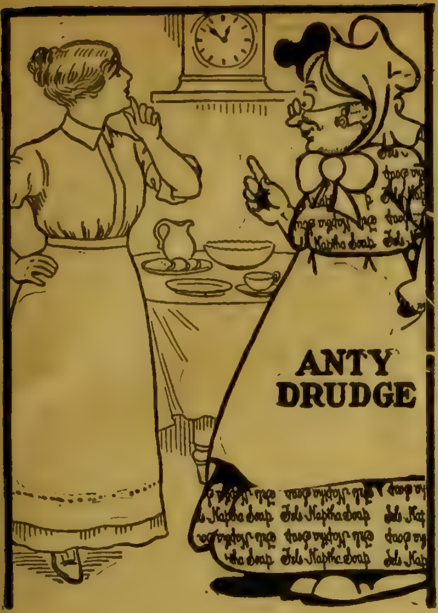
While this had been transpiring, Bob had remained partially concealed behind his pile of sacks. Now, however, he rose to the full height of his young manhood and immediately remembered that he was sans footgear Explaining his predicament to Mr. Lorimer, that gentleman instantly volunteered to fetch his shoes, and shortly returned in a gale of laughter holding at arm's length two sticks which he had thrust through the tramp's discarded brogans and now presented to Bob with an elaborate bow.

"Rum taste in footwear you have, Hastings. In fact, these are about the rummiest shoes I ever saw."

"Why," stammered Bob, "those are not my shoes. I left mine just outside the fence by the gate."

"I have no doubt but what you did, sir," laughed Mr. Lorimer. "I also doubt not that they are far away by this time. Just wait a minute and I'll fetch you a pair of mine. They will at least be better than the dilapidated articles you have received in exchange."

While his host was absent on this errand of mercy, Bob and the young



Mrs. Swiftly—"I wish Johnny would hurry. I sent him to the village for some Fels-Naptha Soap because I used the last for my wash this morning. I can't get along without it. I use it for everything. Johnny came home at noon and said to me: 'Say, Ma, I got a hundred in two studies this morning,' and when I asked what, he said: '40 for 'rithmetic and 60 for geography.' Isn't he a case?"

Aunty Drudge—"He's cute, all right. But why don't you buy Fels-Naptha by the box or carton—then you'll always have it on hand."

If you have Fels-Naptha on hand, you're ready for any kind of work—washing, house-cleaning, dish-washing.

There is nothing better than Fels-Naptha for washing flannels or woolens. It leaves them soft, white and woolly. And it's fine for colored clothes, too, either wool or gingham.

Use it the right way, in cool or lukewarm water.

Full directions are on the Red and Green Wrapper.

Fels & Co., Philadelphia.

lady mounted guard over the yellow Persian, the animal betraying an unmistakable preference for the open air.

"Poor fellow," said Miss Lorimer, "he must be thirsty."

"Are you referring to me or the cat?" said Bob, gravely.

"To the cat, of course," retorted Miss Lorimer, merrily. "I should judge you quite capable of supplying your own wants."

"When I have my freedom, yes. Not when I am penned up like this. I am so hungry I could eat 'most anything."

"Then I shall see about breakfast at once. But I shall serve His Persian Majesty first."

With a nod to Bob she left the building, returning shortly with a pannakin of milk for the cat, while Mr. Lorimer brought the promised shoes for Bob.

Leaving the cat a prisoner, the trio made their way to the house, where a substantial breakfast was merrily discussed. And the meal was hardly concluded when Dorothy arrived in the car and, after listening to Bob's adventures in pursuit of the yellow Persian, insisted on taking Miss Lorimer home with her to spend the day.

So the cat was coerced into a plebeian chicken crate and returned in ignominy to his mistress, who received him with tears of joy and gratitude and promptly confined him in a covered poultry run until he should learn the error of his ways and behave as a respectable cat should.

Feeling rather heroic, but with his self-esteem kept within bounds by the chaff to which he was subjected by his sister and her guest, Bob drove the little car home, there to be waylaid by Little Bob and obliged to recount his adventures in detail, and then tell them all over again.

Of course, when evening came, he had to drive Miss Lorimer home. And before many days he was spending much of his time at the model home. So Dorothy was not so surprised as she seemed when Bessie Lorimer showed her Bob's engagement ring with a circlet of diamonds surrounding an image of a cat done in yellow enamel.

IDEAS FOR THE COOK

Written for the California Cultivator
By Isabel Cottle.

Breakfast.

Fresh Peaches Boiled Rice, Cream.
Baked Eggs Cream Toast
Coffee.

Lunch or Supper.

Potato and Onion Soup.
Baked Sardines. Parsnip Fritters.
Cucumber and Lettuce Salad.
French Dressing.
Peach Meringue Pie.
Tea or Milk.

Dinner.

Beefsteak Pie Rice,
Pimento-Cheese Sauce.
Corn Salad.
Spiced Gooseberries, Coffee Cake
Coffee.

Baked Sardines.

To one small can of sardines allow two tablespoons of butter, four tablespoons of bread crumbs and one small onion, finely minced, and two eggs, salt and pepper to taste; wipe all the oil from the sardines, divide them into halves and lay in individual baking dishes, melt half the butter, pour it over them and add two tablespoons of hot water; beat up the eggs and gradually mix them into the bread crumbs, onion, salt and pepper and add remainder of butter; spread this mixture over the sardines and bake fifteen minutes.

Potato and Onion Soup.

One pound of potatoes, one large onion, one ounce of dripping, one quart of boiling water, one-half pint of milk, one tablespoon of crushed tapioca, pepper and salt to taste. Peel and slice the potatoes and the onion, then put them in a stewpan with the dripping, and let cook lightly for five minutes. Pour over one quart of boiling water, and let all simmer till soft enough to press through a wire sieve. When done, return to saucepan with one-half pint of milk; let come to the boil, and then gently stir in the tapioca. Add pepper and salt to taste and allow the soup to simmer until the tapioca is quite clear. Serve with croutons.

Pimento Cheese Sauce.

Melt one-fourth cup butter, in this cook one-fourth cup flour, half teaspoon salt and one-fourth teaspoon paprika. Add two cups rich milk and stir until boiling, then add one cup minced pimentos and one and three-fourths cups of mild cheese, grated. Set over boiling water and stir until smooth.

Parsnip Fritters.

Scrape parsnips and cut in two and a half inch lengths. Cut again in lengthwise halves or quarters, according to size, and cook in boiling, unsalted water until tender. Remove from pan, coat with butter and, if desired, sprinkle over a few drops of lemon juice. Dip in batter made of the yolks of two eggs, beaten, one-fourth teaspoon salt, a teaspoon of olive oil or melted butter and three-fourths cup milk. Gradually stir into this one cup of sifted flour. Make this batter one hour before meal time and when ready to use add the white of one egg beaten dry. Fry the fritters in hot fat.

GETTING NEW RECIPES AND KEEPING THEM

Written for California Cultivator
By Katherine Graham

Some of the very best recipes I have ever found have been in free cook books sent out as advertisements, so now whenever I see a cook book advertised free or for a nominal sum I always send for it. Never yet have I failed to find good suggestions and new suggestions.

The advertisers know that to give full value as an advertisement the recipes must be not only attractive but practical; that after a housekeeper has used a half dozen times an excellent cake recipe that always calls for Blank's Baking Powder or Blank's Shortening, she is very likely to order Blank's goods from her grocer and give them a trial.

Mark Your Favorites.

When you have used a recipe and found it good, do you mark it? It will save time and bother at some future date when you are hunting hurriedly through your cook books for something for dinner.

The Recipe File.

A file consisting of a box, index cards and filing cards, is the most satisfactory way of keeping recipes cut from papers or collected from friends. A stout pasteboard box answers nicely, but a regular wooden file will be a thing of comfort your life long. The index cards may divide the recipes just as a cook book ordinarily is divided, into soups, fish, meat, poultry, game, stuffings, meat and fish sauces, eggs, vegetables, salads, cereals, breads, cake, pastry, puddings, etc.

Then in my file I have a division for menus for breakfast, lunch and dinner, one for picnic lunches, one for lists of favorite dishes of each member of the family or frequent guests, one for cooking time table

(Continued on Page 71)

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A FAMOUS GREEN UNCOLORED JAPAN TEA
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Only one coupon from each student.

San Francisco--Los Angeles Produce Markets

Los Angeles Market

LOS ANGELES, July 15, 1914.

BUTTER

There is good demand for butter; a slight advance is noted on better grades. Arrivals yesterday aggregated 65,000 pounds.

Prices to trade 4 cents above following quotations:

Creamery Extras	.26
Firsts	.22@23
Country	.20
Ladle	.19

CHEESE

Prices to trade 1 and 2 cents higher:

Eastern Daisy	.18½@19
California Fresh	.13½@14
Domestic Swiss	.21
Longhorn	.19@19½
Imported Swiss	.24@26
Oregon	17½@18
Cheddars	.19

EGGS AND POULTRY

Case counts dropped during last of week and recovered on Thesday and now stand at our last quotations. Market promises a rise soon.

Prices to trade 3 cents higher than following quotations:

Fresh ranch, case counts	.26
Candled	.27½@28
Northern Case Count	.26
Petaluma-Santa Rosa	.27

Price to producer:

Hens, lb.	.14@18
Roosters	.7@8
Broilers	.15
Fryers	.18
Roasters	.19@20
Turkeys	.22@27
Ducks	.14
Geese	.14
Squabs, doz.	.2.50

LIVE STOCK

The following quotations are f. o. b. Los Angeles on all stock:

Hogs, 175 to 200 lbs., per cwt.	.9.00
Prime Steers	.7½
Heifers	.6¼
Calves, lb.	.8½
Sheep—	
Ewes, head	.4.00
Wethers	.4.25@5.00
Lambs, head	.4.00

POTATOES

Wholesale selling price:

Old	1.40@1.50
Sweets, lug	.60@80
News, cwt.	.1.40@1.60
Northern Burbanks, cwt.	.1.60

ONIONS

Wholesale selling price:

Stockton Red, sack	.2.40@2.50
Red, cwt.	.2.75
Silver Skins, lug	.65@75
Yellow Danvers, sack	.2.50@2.65
Garlic	.12@15

VEGETABLES

Wholesale selling price:

Asparagus, lb.	.7@8
Artichokes, Northern, doz.	.90@1.00
Beets, dozen	.20@25
Beans, String	.4@5
Cabbage	.75@90
Carrots, doz.	.20@25
Cauliflower, lug	.1.15
Celery, doz.	.1.00
Corn, Sugar, box	.35@45
Cucumbers, lug	.35@45
Egg Plant	.7@9
Escarole, doz.	.40
Horseradish, doz.	.10@12
Leeks, doz.	.35@40
Lettuce, crate	.70@90
Mint, doz.	.25@40
Okra, lb.	.12@15
Onions, Green, doz. bunches	.15@20
Parsnips	.25@30
Peas, lb.	.4@6
Oyster Plant	.25@30
Peppers	.7@9
Chili, lb.	.5@6
Radish	.15@20
Rhubarb—	
Crimson Winter	.70@80
Spinach, doz.	.20@25
Squash—	
Cream	.40
Summer, crate	.35
Crookneck	.25@35
Turnips	.25@30
Tomatoes, lug	.40@85

FRESH FRUIT

Wholesale selling price:

Apples, new, lug	.1.00@1.15
Astrachan, lug	.1.65
Apricots, lug	.50@75
Berries—	
Strawberries, basket	.3@4
Raspberries	.4@6
Blackberries	.3@5
Loganberries	.5@6
Crabapples, lug	.80@1.00
Grapes—	
Malagas, crate	.1.65@1.85
Black, lug	.1.15@1.35
Thompson Seedless, crates	.1.35@1.50
Gooseberries, lb.	.9@11
Bananas	.3½@4
Cherries—	
Red, lb.	.9@10
White, lb.	.8@10
Cantaloupes, crate—	
Ponies	.1.35@1.50
Standard	.1.75@1.85
Jumbos	.1.95@2.10
Figs, 1-layer box	.85@1.00
Nectarines, lug	.1.15@1.35
Pineapples, lb.	.5@6
Pears, Bartlett, box	.1.50@1.75
Peaches, lug	.35@65
Plums, lug	.50@1.00
Tragedy	.1.25@1.35
Watermelons, lb.	.1¼@1¾

CITRUS FRUIT

Wholesale selling price:

Lemons	.4.00@5.75
Grapefruit, Seedless	.2.25
Valencias	.1.65@3.00
Limes, crate	.1.50

DRIED FRUITS

Wholesale prices to retailers are:

Evaporated Apples, Fcy., lb. bxs	.10@12
Apricots	.15@18½
Peaches	.6½@7½
Pears	.8@12
Nectarines	.12½
Prunes	.6@16½
Plums	.10

NUTS

Prices named by California Walnut Growers' Association are:

No. 1	.17½
Budded Walnuts	.21
No. 1 Soft Shell Walnuts	.16
No. 1 Hard Shell Walnuts	.15½
No. Twos	.11½

Wholesale price:

Almonds—	
I X L	.22@23
N P U	.20@21
Drakes, Thin Shells	.18@19
Pecans	.18
Peanuts—	
California, Raw	.5¼@6
Japan	.6@6½
Eastern	.7
Pine Nuts	.15@16
Rice Corn	.5.00@5.25

HONEY

Wholesale selling price:

Comb, Fancy, Water White	.15
White	.13
Light Amber	.11@12
Extr. Water White	.8
White	.7½
Light Amber	.7
Beeswax	.35

BEANS

Wholesale selling price:

Producer's price not far from one dollar under these quotations:

Limas	.7.35@7.50
Lady Washington	.4.60@4.75
Black Eyes	.7.50
Pinks	.4.65@4.85
Lentils	.6.00@6.25
Small White	.5.00@6.00
Garbanzos	.8.00@8.50

RICE

California	3.50@4.75
Broken	.3.00@3.75

HAY

Buying prices f. o. b. cars Los Angeles:

Barley	.10.00@11.00
Wheat Hay	.10.00@11.00
Tame Oat	.11.00@13.00
Alfalfa	.9.00@11.00

GRAIN

Wholesale selling prices f. o. b. Los Angeles:

Wheat	.1.85
Corn	.2.15
Oats, Red	.2.35
Oats, White	.1.60
Kaffir Corn	.1.90
Millet	.3.75
Popcorn	.4.75@5.00
Egyptian Corn	.2.20
Barley Seed	.1.45
Milo Maize	.2.00
Cal. Seed Oats	.2.25
Sunflower Seed	.5.25@5.35

FEED STUFF

Wholesale selling prices f. o. b. Los Angeles:

Bran, Heavy	.1.70
Alfalfa Meal	.1.05
Alfalfa Syrup, per cwt.	.1.05
Beef Scraps	.3.00@3.10
Beet Pulp	.1.25
Cracked Corn	.2.20
Feed Meal, cwt.	.2.25
Cotton Seed Meal	.1.85
Blood Meal	.3.60@3.70
Bone Meal	.2.00@2.10
Charcoal	.1.90@2.00
Bone Green	.1.95@2.05
Cracked Wheat	.2.00
Oil Cake Meal	.2.05
Fish Meal	.3.15@3.25
Rolled Oats	.1.65
Rolled Barley	.1.20
Middlings	.1.95

San Francisco Market

SAN FRANCISCO, July 14, 1914.

BUTTER

Butter remained as quoted last week, till Saturday when it took a strong advance, but it dropped to 25½ for extras. Arrivals very light.

Extras	.25½
Prime Firsts	.23
Firsts	.23

CHEESE

California Y, American	.13½@14½
California Flats	.10@13½
Oregon Twins	.15½
Oregon Y, America	.16
Cheddar	.20

EGGS AND POULTRY

The egg market is very satisfactory with material advance over last week's quotations. Soon after last quotations the advance began and on Friday a two-cent advance was reached. A half-cent drop was made Saturday, which was recovered on Monday.

Extras	.27
Firsts	.24
Select Pullets	.23½
Hens	.17@18
Fryers	.25@30
Roosters, old	.12@13
Roosters, young	.24@26
Broilers	.18@26
Ducks, doz.	.6.00
Squabs	.1.50@2.00
Belgian Hares, lb.	.13@14

LIVE STOCK

San Francisco prices, gross weight:

Steers	.4@7¼
Cows and Heifers	.3@6¼
Calves, lb., live weight	.7@9
Hogs	.7¾@8¾
Wethers	.5½@5¾
Ewes	.4¼@5
Milk Lambs	.6½@7½

POTATOES

Delta Burbanks	.1.00@1.50
Oregon Burbanks	.75@1.25
Washington	.60@70
New Potatoes, lb.	.1¼@1¾
Garnets	.1½@2
Sweets, cwt.	.2.50@2.75

ONIONS

Bermudas, crate	.2.00@2.25
New Reds, cwt.	.2.00@2.25
Garlic, New	.5@8

VEGETABLES

Wholesale selling price:

Asparagus, box	.1.00@1.25
Beans—	
Limas, lb.	.5@6
Wax, lb.	.1@3
Strings	2@3½
Cabbage, cwt.	.1.00@1.25
Carrots, sack	.35@50
Cauliflower, doz.	.40@70
Corn, Green, sack	.75@1.25
Alameda	.1.25@1.75
Cucumbers—	
Deltas, lugs	.75@1.00
Egg plant, lug	.1.00@1.15
Peas, sack	.75@1.25
Peppers—	
Bell, lug	.75@85
Chili, lug	.1.00@1.25
Rhubarb, box	.60@1.00
Tomatoes—	
Southern, crate	.15@35
Delta, lug	.40@80

FRESH FRUIT

Apples—	
Alexander	.50@1.00
Red Astrachan, box	.50@90
White Astrachan	.50@1.00
Gravensteins	.50@1.25
Apricots, crate	.50@75
Small, lugs	.75@1.25
Canners, ton, Yellow	.25.00@30.00
Blackberries, chest	.1.50@2.00
Bananas, Hawaiian, bunch	.1.25@1.75
Cantaloupes, crate	.1.00@1.25
Ponies	.75@1.00
Northern	.1.50@2.00
Orange Pack	.1.00@1.25
Jumbos	.1.50@2.00
Crabapples	.50@1.00
Figs—	
Black, box, single layer	.40@65
White, box, single layer	.50
Grapes, lug	.1.25
Gooseberries, lb.	.6
Loganberries—	
Red, chest	.4.00@5.00
Black	.2.00@3.00
Loquats, crate	.75@1.25
Peaches, crate	.30@65
Basket	.40@75
Lugs	.75@1.00
Plums, crate	.40@65
Pears, box	.50@75
Prunes, crate	.40@65
Pineapples, Hawaiian	.1.50@2.25
Strawberries, chest	.1.50@3.00
Raspberries	.2.50@5.00
Watermelons	.1¼@1½

CITRUS FRUIT

Grapefruit, Seedless	.1.00@2.50
Lemons	.2.75@5.50
Lemonettes	.2.50@3.00
Limes, cs.	.4.00@5.50
Tangerines	.75@1.25
Valencias	.1.75@2.50
Mediterranean Sweets	.1.00@1.50

DRIED FRUITS

Wholesale prices are:

Prunes—1913 crop, bulk basis: 30s-40s, 7½c, 40-50s, 7½c; 50-60s, 7 1-2c; 60-70s, 7½c; 70-80s, 7c; 80-90s, 5¾c; 90-100s, 5½c. The above are for both Santa Clara and outside; 1912 crop worth practically as much as the new crop; 20-30s, 15c in 25-lb. boxes.

Other Fruits. 50-lb. Boxes—	Standard	Ch.	Extra Ch.	Fcy.
Evap. Apples	....	10	10½c	11½c
Peaches	4¾c	5 c	5⅝c	5¾c
Pears	8½c	9 c	10 c	....

RAISINS

The following prices are f. o. b. Fresno, as given out by the Associated Raisin Company, and are effective on all sales until August 1, 1914. 1912 crop practically the same figures as the new crop. 1913 crop, per lb., effective at once: Loose Muscatels (50s), 1-crown, 4¾c; 2-crown, 5½c; 3-crown, 6c; 4-crown, 6c; Seeded, fancy, 16-oz. pkgs., 7½c; do, 12-oz., 6c; do, bulk, 6¾c; do, choice, 16-oz., 7c, do, 12-oz., 5¾c; do, bulk, 6½c; Sultanas, no stock; Thompson Seedless, unbleached, 50s, 6c; 16-oz., 7⅛c; 12-oz., 5&c; recleaned, ¼c advance; do, floated, ½c advance; London Layers, no stock. Local representatives of the Association are asking ¼c higher, while several of the large packers are quoting ⅛c under the Association's figures.

The California Associated Raisin company has issued a price list dated May 28th, on the 1914 crop.

3 Crown London Layers, 20 lb. box, $1.15. 4 Crown Cluster, $1.40. 5 Crown Dehesa Clusters, $2.00. 6 Crown Imperial Clusters, $2.50. 5-lb. boxes, 50c extra; 10-lb. boxes, 25c additional. Fancy Clusters, 1-lb. cartons, 20 to the box, $1.65. Fancy Clusters, 2-lb. cartons, 12 to the box, $2. Fancy Clusters, 5-lb. cardboard cartons, 4 to the box, $2.25. Bulk Layers in 50-lb. cases, $2.50. All prices guaranteed against decline to January 1, 1915, and subject to advance without notice."

NUTS

Peanuts—	
Unpolished	.5½@6
Polished	.6@6½
Japanese, Shelled	.6¼@6¾
Italian Chestnuts	.6½@7

BEANS

Wholesale selling price:

Limas	.6.75@6.85
Pink	.4.10@4.20
Black Eyes	.7.00@7.25
Cranberry	.5.75@6.00
Small White	.4.75@5.80
Garbanzos	.6.50@7.50
Large White	.4.10@4.25
Bayou	.6.50@7.00
Manchurian Cranberries	.3.75@3.90
Manchurian Butters	.4.60@4.80
Manchurian Speckled Bayous	.3.75@4.00
Red Mexican	.6.00@6.50
Horse Beans	.2.00@2.25

HONEY

1913

Comb, Water White	.14@15
Amber	.12@1
Dark	.10@11
Extracted White	.7½@
Light Amber	.6½
Dark	.3½@
Beeswax	.27@32

HOPS

1913

Sacramento Valley	.15@1
Sonoma-Mendocino	.17@17½
Oregon Clusters	.16@1
1914 Contracts	.14@15½

HAY

Under date of July 11, Scott, Magne & Miller say:

Receipts of hay for the past week were 2853 tons, about the same as las week, 2906 tons.

The market is quiet and receipts ar moving with difficulty, very little choic hay arriving. Sale of alfalfa is limite because of abundance of this and clove hay in practically all dairy districts Straw remains unchanged.

We quote the average wholesal prices on carload lots of new crop ha on today's market as follows:

Fancy Wheat Hay, lt. bales	.11.00@12.0
No. 1 Wheat or Wheat and Oat	.9.00@10.0
No. 2 Wheat or Wheat and Oat	.7.00@8.5
Choice Tame Oat	.10.00@11.0
Other Tame Oat	.7.00@9.0
Barley	.6.00@8.0
Wild Oat	.6.00@8.0
Alfalfa	.6.00@9.0
Stock Hay	.5.00@6.0
Straw, new	.40@5

GRAIN

Wheat, Cal. Club	.1.57

WEATHER CONDITIONS

San Francisco, Cal., July 11, 1914.

Report from the various stations of the U. S. Weather Bureau, by Geo. H. Wilson, director, San Francisco.

	Rainfall Data.			Temperature Data.	
	Past Week.	Seasonal to Date.	Normal to Date.	Maximum.	Minimum.
Eureka	....	.01	.07	62	48
Red Bluff	....	....	....	98	60
Sacramento	....	....	....	90	52
San Francisco	.02	.02	....	64	50
San Jose	....	....	....	76	44
Fresno	....	....	....	100	58
Independence	....	....	....	92	54
San Luis Obispo	....	....	.01	82	48
Los Angeles	....	....	....	80	56
San Diego	....	....	....	72	62

T means trace.

Corn, Eastern Yellow, blk.	1.73¾@1.75
Egyptian, White Corn	1.70@1.72½
Barley, Feed	97½@1.00
Oats, white	122½@1.27½
Oats, red	1.00@1.10
Millet	2¼@2½
Flaxseed, lb.	4@4½
Mustard, Brown	4@4¼
Rye	1.50@1.55
Sunflower	4@4½
Vetch Seed	3@3½
FEED STUFF	
Alfalfa Meal, car lots	11.50@12.50
Bran, ton	25.50@26.50
Feed Cornmeal, ton	41.00@41.50
Cracked Corn	41.00@41.50
Rolled Barley, ton	21.50@22.00
Rolled Oats, ton	37.00@37.50
Middlings	32.00@33.00
Shorts	27.00@28.00
Oilcake Meal	32.00@33.50
Cocoanut Meal	25.00@26.00
Linseed Oilcake Meal	27.00@28.00

Citrus Fruit Market

LOS ANGELES, July 15, 1914.

A material shrinking in shipments has aided in clearing the market, and very satisfactory conditions prevail. Shipments are now running not far from 100 cars a day. There will probably be still lighter shipping during the next four or five weeks. Not far from 40 per cent of the total Valencias are shipped. F.o.b. California prices not far from $2.00 per box.

Ten or 15 carloads of lemons are going forward daily and are meeting with fair reception in Chicago and the West; east of Chicago prices are disastrous. Thousands of boxes were sold in New York and Boston yesterday at from $1.10 to $1.35. There are afloat 341,000 boxes. Last year's shipments the same date only amounted to 323,000 boxes, while the average for the past ten years for this same time has been about 250,000 boxes.

Shipments.

Shipments of oranges from Southern California to date since November 1, 1913: 31,905 cars, lemons, 2,261; total 34,166. To same date last season: oranges, 12,052 cars; lemons, 1,811; total, 13,863. Total of all citrus fruits two years ago this date, 30,822.

NEW YORK, July 13.—Twenty-two cars Valencias, four sweets, one seedlings, one plain oranges, one mixed, one lemons, sold. Market unchanged on Valencias, weak on lemons. Fair and warm.

VALENCIAS—	Avge.
Mother Colony, xf., S.T. Anaheim	$4.05
Mother Colony, xc., S.T. Anaheim	3.45
Whittier, S.T. Whittier	3.45
La Habra, S.T. Ex.	3.40
Reliable, S. T. Ex.	3.10
Pet., S.D. San Dimas	3.30
Jameson, Q.C. Corona	3.25
Justrite, Q.C. Corona	3.00
Red Ridinghood, S.D. Ex.	3.20
Geo. Washington, Or. Ex.	3.35
Arcadia, Baldwin Estate	3.05
Burro	2.75
Trail, A.C.C. Pasadena	3.20
Canyon, A.C.G. Pasadena	2.80
Red C. Covina Ex.	3.20
Lake Hemet, A. F. Hemet	3.00
Mission Indian, A. F., Hemet	1.95
Paul Neyron, S.A. Ex.	3.20
Daisy, Covina Ex.	3.20
SEEDLINGS—	
Quality	$1.60
SWEETS—	
Thor	$1.90
Jupiter	1.60
Quality	1.85
Puritan	2.05
Yacht	1.70
Homer	2.05
Camel	1.45
Dan Patch	2.30
Pony	2.00
ST. MICHAELS—	
Thor	$2.50
GRAPEFRUIT—	
Old Mission	$3.60
Orchard	2.00
VALENCIAS—HALVES—	
Perfection	$1.40
GRAPEFRUIT—HALVES—	
Orchard	$1.80
LEMONS—	
Happy, ventilated	$2.20
Smile, ventilated	1.60

BOSTON, July 13.—Fourteen cars oranges, one car lemons sold. Clear and warm. Market is unchanged.

VALENCIAS—	Avge.
Quail, O.K. Narod	$2.75
Athlete, S.A., Claremont	2.90
Duquesne, A.C.G. C. Oak	2.80
Fort Pitt, A.C.G. C. Oak	2.50
Old Mill, A.C.G. C. Oak	2.35
Violet, D.M. Duarte	2.60
Airship, F. C. Fillmore	2.90
Cycle, F.C. Fillmore	2.30
Rooster, Or. Orange	3.10
Glendora Alps, A.C.G., Glendora	3.50
Glendora Home, A.C.G. Glendora	2.55
Hobo, A.H. Pachappa	2.55
Elephant, Elephant Orchards	2.80
Aurora, Amer. Ft. Dis.	2.70
LEMONS—	
Trail, A.C.G. Lamanda Parkkk	$2.80

PHILADELPHIA, July 13.—Eight cars sold. Weather muggy. Market is advancing.

VALENCIAS—	Avge.
Quail, O.K. Cucamonga	$2.75
Flyer, O.K. Cucamonga	2.30
Hunter, A.C.G. Glendora	2.55
El Capitan, S.D. San Dimas	2.80
Mother Colony, S.T. Anaheim	3.30
Carnival, S. T. Anaheim	3.00
Gold Wing, Fullerton M.O.A.	2.95
Gold Seal	2.90
Golden Orchard, Ind. Ft. Co.	2.70
Freedom, Ind. Ft. Co.	2.70
Red Wing, Fullerton, M.O.A	2.50
LEMONS—	
Quail, O.K. Cucamonga	$3.35
SWEETS—	
Brownie	$2.65

One car Florida oranges sold, 65 cents to $1.10; grapefruit, 60 cents to $1.00.

PITTSBURGH, July 13.—Weather hot. Four cars Valencias sold.

VALENCIAS—	Avge.
Tustin Gem, Tustin Packing Co.	$2.95
Old Oak, Tustin Packing Co.	2.85
Brownie, Rialto Ft. Co.	2.65
Iris, D.M. Duarte	3.40
Violet, D.M. Duarte	3.15
Jesmine, D.M. Duarte	3.00
Transcontinental, Or., El Modena	3.30
Goldfinch, Or., El Modena	2.90
El Modena, Or., El Modena	2.80

CINCINNATI, July 13.—Hot. Market steady on oranges and lemons. Sold two cars oranges, two cars lemons.

VALENCIAS—	Avge.
Pointer, A.C.G. Azusa	$2.90
Wildflower, Randolph, Ft. Co.	2.35
LEMONS—	
Las Fuentes, C.S. Summerland	$3.45
Montecito	3.00
Cream, C. M. Brown	2.40

CLEVELAND, July 13.—Four cars Valencias, one car sweets, one oranges, two cars lemons sold. Market is steady. Rainy, muggy.

VALENCIAS—	Avge.
Airship, F.C. Fillmore	$3.25
Cycle, F.C. Fillmore	2.55
Oriole, F. C. Fillmore	2.00
Reliable, S.T. La Habra	2.80
Carnival, S.T. Anaheim	2.85
Gold Buckle	3.20
LEMONS—	
Rey, S. T. Fernando	$3.20
Tunnel	2.65
Hillside Gem, L.F. Escondido	2.75
Palomar	2.25
SWEETS—	
Puritan	$2.55
Yacht	2.30
ORANGES—	
Brownie	2.60

ST. LOUIS, July 13.—Clear and warm. Market is steady. Seven cars oranges, one mixed car sold.

VALENCIAS—	Avge.
Ticktock, Or., Villa Park	$2.65
Banana Belt, Or., Villa Park	2.65
Echo, S.T. Ex., Pasadena	2.90
Arroyo, S.T., Ex., Pasadena	2.65
Chimes, C.C. Lindsay	2.65
Dolores, C.C. Lindsay	2.45
Our Farm, S.T. Placentia	2.55
LEMONS—	
Bell	$3.95
Gold Bear	3.60

LOS ANGELES, July 13.—The Pacific Coast Fruit Auction Co. offered seven cars of oranges today, of which five cars were sold and two withdrawn.

VALENCIAS—	Avge.
Naralimo, Sparr Ft. Co.	$1.80
Circus, Sparr Ft. Co.	1.55
Naralimo, Sparr Ft. Co.	1.75
Circus, Sparr Ft. Co.	1.50
Red Raven, P. & Lett	1.75
Date Palm, P. & Lett	1.50
Upland King, Upland F.O.A.	1.65
Hypatia, Upland M. O. A.	1.15
CRAFTON LATES—	
Glen Rosa	$1.50
State Flower	1.25

CHICAGO, July 13.—New apples, 50@1.00 per box. Lemons, California, 4.00@5.25 per box; oranges, 2.00@3.00; pineapples, per crate, 2.25@3.75; peaches, 1.00@2.00 per case, 1.00@1.25 per bushel; pears, 1.25 per bushel; California cherries, per 3-pound box, 75@1.60; apricots, per box, 75@1.25 peaches, 90@1.25; plums, 60@1.40 per crate; contaloupes, 2.00@2.25 per standard crate; watermelons, $135@$230 per car; blackberries, 1.75@2.25 per 24-quart case; red raspberries, 1.75@2.00 per 24 pints; blackcaps, 1.00@1.50 per 24 pints; gooseberries, 90@1.10 per 16-quart case; blueberries, 2.00@3.00 per 16-quart case; currants, 1.25@1.50 per 16 quarts.

"I think the baby has your hair, ma'am," said the nurse girl, looking pleasantly at her mistress.

"Gracious!" exclaimed the lady, glancing up from her novel. "Run into the nursery and take it away from him! What will he do next "—Stray Stories.

PHOSPHORUS

"You talk about phosphorus, and sometimes you say phosphoric acid. Do they both mean the same, or, if there is a difference, can you explain it to us so that an ordinary individual can understand?"

This question was fired at a professor from the experiment station who was discussing the subject of soil fertility at a meeting of a farmers club.

"There is a difference," replied the professor, "and it is well worth while for farmers to understand the meaning of the two terms. A fertilizer containing a certain percentage of phosphoric acid is not worth nearly as much as a fertilizer containing an equal percentage of phosphorus. Perhaps I can best explain the difference by an illustration.

"There is practically the same difference between phosphorus and phosphoric acid that there is between lemon and lemonade. A glass of lemonade may contain the juice of one lemon but the water which makes up the largest part of the bulk is free and plentiful and you should pay but little, if anything, for it.

"Phosphoric acid is a combination of phosphorus and oxygen in the proportion of about three parts of phosphorus to four parts of oxygen. In other words, in seven parts of phosphoric acid there are only three parts, or less than half, phosphorus.

"There is no more reason why a farmer should pay anything for the oxygen in phosphoric acid than there is for him to buy water for making lemonade. Air and water contain large quantities of oxygen and he can get his supply free from these sources.

"In labeling their goods, most manufacturers of fertilizers show the percentage of phosphoric acid in the goods. Some experiment stations and chemists give the percentage of phosphorus in the products tested by them, especially in the case of raw rock phosphate. When considering the relative value and cost of two fertilizers it is important that you compare them upon the same basis. Be sure that you are not considering phosphoric acid in one and phosphorus in the other. Other things being equal, a fertilizer containing twenty-five per cent phosphoric acid is worth no more than a fertilizer containing twelve per cent phosphorus."—Successful Farming.

UNPROMISING

A retail dealer in leather goods, doing business in Baltimore, wrote to a firm in southern Massachusetts, ordering a carload of the merchandise. The firm wired him:

"Cannot ship your order until the last consignment is paid for."

"Unable to wait so long," telegraphed the leather merchant. "Cancel the order."—S. C. Clarke in February Lippincott's.

WHY HURRY?

"My dear Reginald, now that you've left college, you must really begin looking for some sort of employment."

"But don't you think, mother, it would be more dignified to wait till the offers begin comng in?"—Life.

Several cities in Hungary maintain municipal meat markets.

GETTING NEW RECIPES

(Continued from Page 69)

(time required to cook different foods), one for cold day dishes, one for summer dishes, one for Mexican recipes, etc. The beauty of a filing cabinet is that new divisions can be added whenever wanted and each can be placed in its alphabetical order without in the least disturbing the other cards in the file. I think the alphabetical filing is most convenient.

Not every recipe clipped from paper or magazine is really filed. A good plan I have found is to drop loose clippings in the file in front of the division card where it belongs; for instance a recipe for a new cake I drop in front of the index card marked cake. Then after I have tried it and found it good I paste on a regular file card and place it in its alphabetical order in the cake division. In this way my pasted recipes are only the "tried and found worthy" ones. Of course those known to be good received from friends are placed on cards and filed at once.

CAPPING JELLY.

Instead of covering jelly with melted paraffine, as in former years, I last summer cut circles from the ordinary waxed paper and laid flat on the surface of the jelly, then cut larger rounds of the same waxed paper, dipped them in white of egg and pressed down over the tops of glasses. All my jelly kept perfectly.—G. B., Los Angeles.

TWO WAYS OF LOOKING AT IT

A perspicacious young man, passing where an old colored man was busy setting fire to the dead grass in a meadow, accosted him thus:

"Don't do that, Uncle Eb, don't do that!"

"Why so, sah, why so "

"You will make that meadow as black as you are."

"Never mind dat, sah, never mind dat! Dat grass will all grow out an' be as green as you is!"

FOND DADDY

Dr. Wiley says his new infant is an absolutely perfect baby. This does not necessarily prove that the kid is normal, but it proves that his daddy is.—Boston Transcript.

THE HOOKWORM

Buttons and hooks, buttons and
hooks,
When a man's married, you'll know
by his looks. —Judge.

A WONDERFUL MAN

"Eh, doctor," said a gillie of a small Scotch town to a friend, "he maun hae been an extraor'nary man, that Shakespeare. There are things hae come into his head that never would hae come into mine at a'."

Every dairyman and rancher who has or contemplates handling milk products successfully should write today for catalogues of the Primus Cream Separator and the Chilly King Cooler to the Sanitary Dairy Supply Co., Central avenue, Los Angeles, who handle a full line of up-to-date dairy supplies and machinery.

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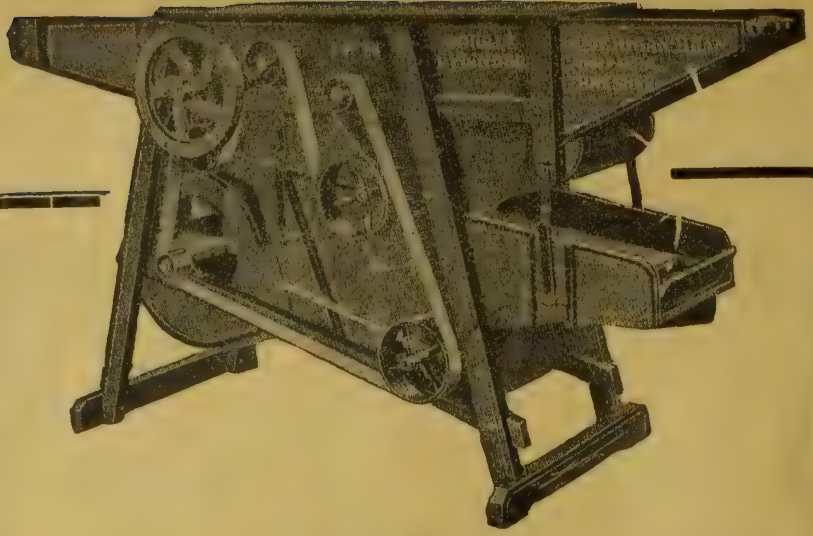

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"I am Going to Sell Out and Buy 160 Acres of—Milford Valley Land."

G. A. Halstead

The following letter was written by G. A. Halstead of Byron, Oklahoma, to his friend, Charles A. McClain of Whittier, Cal., upon the former's return to his home after having personally investigated the Milford Valley lands. Permission to publish this letter was obtained through the courtesy of both gentlemen.

Byron, Oklahoma, June 20, 1914.

Mr. Chas A. McClain, Whittier, Cal.

Dear Friend:—Arrived here all right, but find it very warm in Oklahoma.

I spent two days in Milford Valley. Covered practically the entire valley in an automobile. It is the best land and water proposition I have ever seen for the money. A man must see this project to fully appreciate it.

I went out on the new tract and saw land that had just been broken up five or six weeks. Saw fine stands of alfalfa and all other crops. Went to the old settlement adjoining this land and saw the finest grade of alfalfa in the west. In our party were two men from Imperial, one from Ventura, one from San Diego and a man from Los Angeles. We all agreed that this alfalfa would make two and one-half tons to the acre. We saw orchards loaded with apples, pears, plums, prunes, apricots, peaches, cherries—in fact all kinds of deciduous fruits. We saw pear trees forty years old without a sign of blight—and those old settlers really do not do anything except what they can perform on horseback.

Went to the great reservoir and found the irrigation system first-class. Thoroughly examined the soil and must say that I never saw anything better. If I can sell my farm I want 160 acres of Milford land. Very truly yours, G. A. HALSTEAD.

$30 an acre

Perpetual water right—$70 per share—12 years' time to pay for it if you desire.

On Main Line of Salt Lake Railroad, Adjoining Milford, Utah.

The above letter is similar to scores that have been written by enthusiastic purchasers of Milford Valley land. No matter where you are located—no matter how much money you are making, you'll be just as enthusiastic about Milford land when YOU see it.

The Milford project was designed for solid, substantial, successful men—the land is sold on a cash basis. This is the type of land that's easily worth $250 to $350 an acre when in alfalfa.

If you want the best land in the West for dairying, hog raising, deciduous fruit, potatoes, onions, celery, etc.—land that will produce a sure stand of alfalfa the first year — land that will produce $72 worth of alfalfa from three cuttings — $200 an acre from potatoes the first year—if you want to be part owner in a big gravity irrigation system supplying water at a cost that should not exceed 30 cents per acre per year — a safe, dependable system which you and your neighbors own outright for all time to come—if you want to live in a real mountain climate — the land of rosy-cheeked apples — where every breath of air is laden with health and vigor — where mere existence is a keen delight — where cheap land, cheap water and eager markets enable you to make money fast—go up on one of our excursions—at the homeseekers' rates and select your Milford land. Early buyers are gaining big advantages by locating close to the town of Milford.

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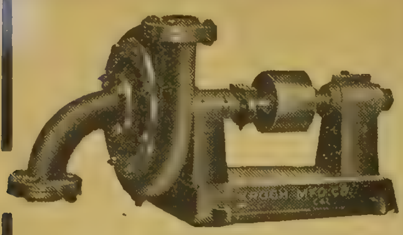
LOS ANGELES July 23, 1914 SAN FRANCISCO

University Students Studying Citriculture

Dr. Coit's Class Studying Orchard Problems at First Hand.
See Article on Page 75

MARKARIAN FIG GARDEN, FRESNO

LEMON TREES UNDER TOBACCO CLOTH TENT AT CORONA



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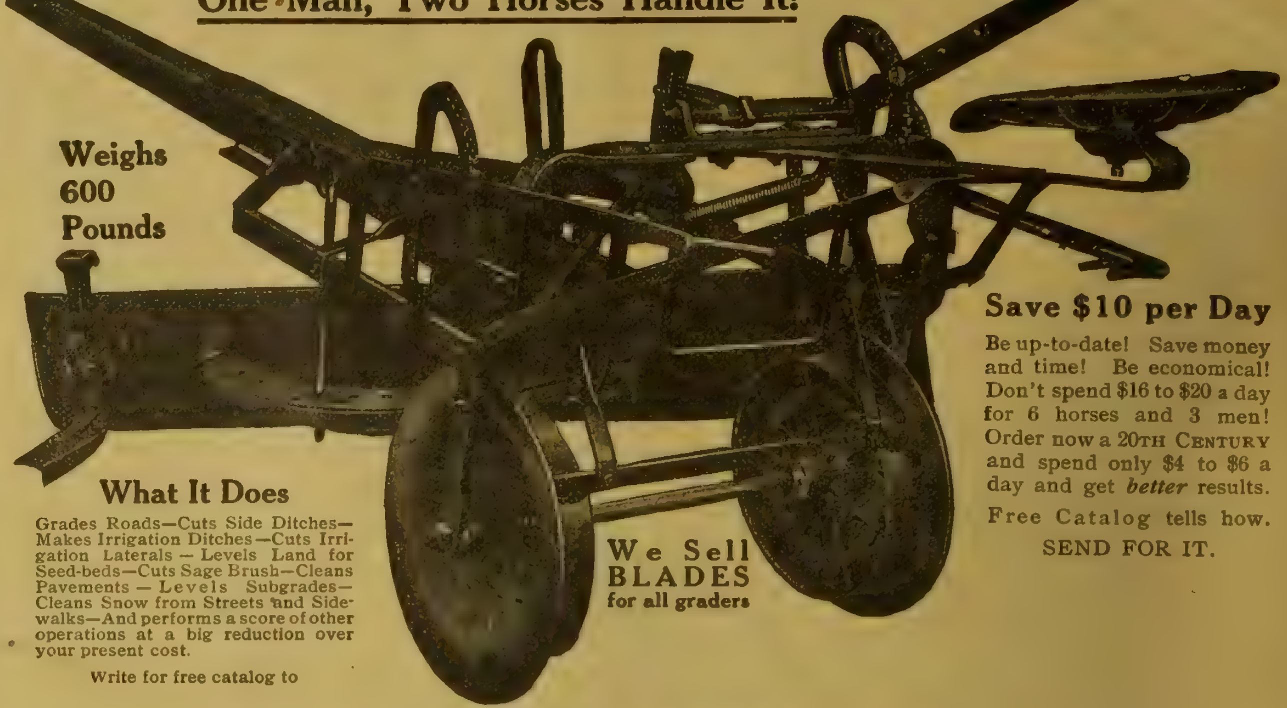

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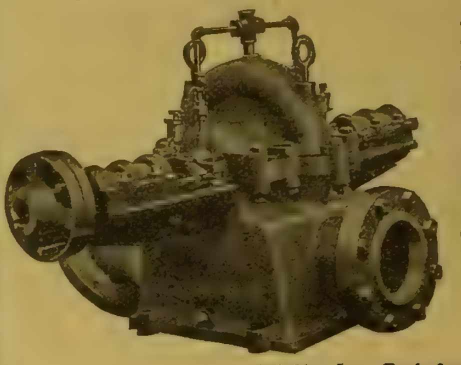

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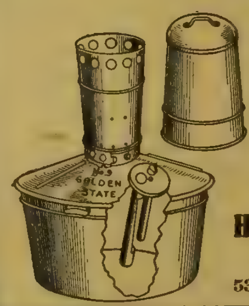

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Vol. XLIII No. 4 LOS ANGELES: THURSDAY, JULY 23, 1914 One Dollar Yearly

Citriculture Class Afield

Dr. Coit's Class, This Year in Charge of I. J. Condit, Spends Several Weeks Visiting Orchards of the State and Each Member Gives Cultivator Readers His Principal Lesson from the Trip

THE SUMMER TRAVELING CLASS IN CITRICULTURE

By I. J. Condit

The work of the second annual summer traveling class in citriculture began at Fairoaks May 18 and ended at Santa Paula June 27, the first two weeks having been spent in the Sacramento Valley, the third week at the university farm at the time of the Fruit Growers' convention, and the last three weeks in the San Joaquin Valley and Southern California. The class is one of four which during about six weeks of the present summer have traveled in various sections of the state, visiting orchards, ranches, packing houses, canneries, vineyards, and nurseries, or studying soil conditions typical of California. As published in the prospectus of the college of agriculture "each student is required to take summer practice connected with his proposed major subject before beginning upon his junior year. The work is carried on as far as possible just as in actual practice. It is intended to give the student an insight into his future occupation. The credit given is six units. Expenses vary with the subject selected. At Davis the expenses for room, board and incidentals need not exceed $50 for a period of six weeks. In some subjects, railway fare and other incidentals of travel may bring the expense up to $150." The expenses for the class in citriculture averaged about $110.

The class this summer traveled over 1245 miles, visited 57 citrus orchards, 18 citrus packing houses, 12 nurseries, eight olive orchards, five olive mills, two fig orchards, two precooling and icing plants, one fertilizing works, and numerous pumping plants. Each of the students presented a full set of notes and some a set of photographs at the completion of the course; these are looked over, graded and returned to the student for future reference. Such notes, if properly taken and preserved, prove a fruitful source of information in later years and form the basis for intelligent experiments when the student leaves college and finds an opportunity to put the ideas into practice. The great diversity in the management of citrus orchards in the various sections visited proved the basis for long discussions by the members of the class; while an agreement was seldom reached as to the proper depth for plowing, the amount of water necessary, the best kind of fertilizer, the value of a soil mulch or the cause and control of mottled leaf, such discussions served to stimulate interest and to emphasize the need for conclusive experiments along such lines. The following brief extracts from notes taken on the trip will give some idea of the schedule and the kind of work done by the students. I shall simply call attention to particular or special features at each place, as space will not permit me to go into detail.

Two days were spent at Fairoaks in the orange groves, examining some experiments to control Armillaria and gummosis. Some time was spent in cleaning out crown gall from the roots of almond trees. An olive orchard infected with olive knot was examined and the habits of the disease noted. The orange packing house and the olive mill of the Fairoaks Fruit Company were visited and notes taken on the pickling of olives and the handling of the oil. One half day was spent in practice in pruning orange trees. One day was spent looking over the extensive nursery and plantings of the Natomas Consolidated Company, where a fine demonstration of blasting soil for tree planting was given.

At Oroville orchard surveys were made of a couple of olive orchards and five orange orchards. Comparative studies were made of the profits from olives and oranges in this district. Some time was spent in the plant of the Ehman Olive Company, which has 350 acres of olives in Butte County, mostly of the Mission variety.

The visit to the United States plant introduction gardens at Chico proved most interesting and instructive. Some 150,000 plants were propagated and distributed last year. Sixteen thousand species of plants have so far been handled at the gardens in the ten years of its existence. In such a collection of plants from all corners of the earth many interesting specimens were found and only a few could be studied; the Weber-Swingle citrus hybrids, the collection of fig varieties, avocado varieties, seedling almonds, peaches and nectarines were especially noted. Among the fruit trees found on the Bidwell ranch near Chico were many old chestnut trees as well as a small but very old orchard of filberts.

The Maywood Colony at Corning has 12,000 acres under cultivation, olives being most largely planted; other fruits in the order of their acreage are, prunes, peaches, apricots, almonds, pears, Smyrna figs and oranges. Two olive mills, those of the H. J. Heinz Company and the Maywood Packing Company, were visited and the methods studied. The Maywood Colony nursery at Richfield was established 19 years ago and has been propagating figs, olives, citrus trees, peaches and almonds.

Some practical experience in pruning was obtained at Orland, where one whole day was spent by the students in cutting out water sprouts, removing dead wood and shaping orange and lemon trees. Large plantings of olives, figs and citrus trees are now under way near Orland.

The extensive plantings of the Mills Orchard Company at Hamilton and Maxwell furnished a good opportunity to observe the methods of planting and of handling a young orchard. At Maxwell the company has already planted out 800 acres of Eureka lemon trees worked on pomelo root; these were transplanted with bare roots and set 24 feet apart on the contour.

The week spent at the Fruit Growers' convention at Davis proved a most profitable one for the students as it did for every one who attended. It gave them an opportunity not only to attend the meetings and listen to the addresses and discussions but also to get acquainted with the fruit growers and speakers and to obtain their views on some of the problems confronting the citrus growers in the various sections.

Traveling south from Davis the class first stopped at Fresno, where a morning was spent at the Markarian fig garden, which consists of 80 acres of Smyrnas and 80 acres of white Adriatics, which in all probability will be worked over to Smyrnas. Mr. Markarian hopes by using Ficus pseudocarica as a capri, to be able to pollinate the first crop of Smyrnas and thus save several tons of fruit which so far have been lost. A short time was also spent at the Kearney ranch studying olives and the effect of alkali on orange trees.

The next stop was at Lindsay, where the picking season was just about over. A visit to a small pomelo orchard showed conclusively that Tulare County can produce excellent fruit and that such fruit can be profitably marketed if its quality is demonstrated. Some careful work in tree surgery has been done near Lindsay on old lemon trunks with Valencia tops, and the future effect on the trees will furnish a good demonstration of the value of such work.

At Porterville one of the first orchards visited was that of Baird brothers, where 50 acres are being irrigated with an overhead sprinkling system so as to insure a uniform soaking over the entire grove. An auto trip towards the foothills showed to what extent the citrus industry is being developed, hundreds of acres of one and two-year old trees having already been developed, while other tracts were in the process of development.

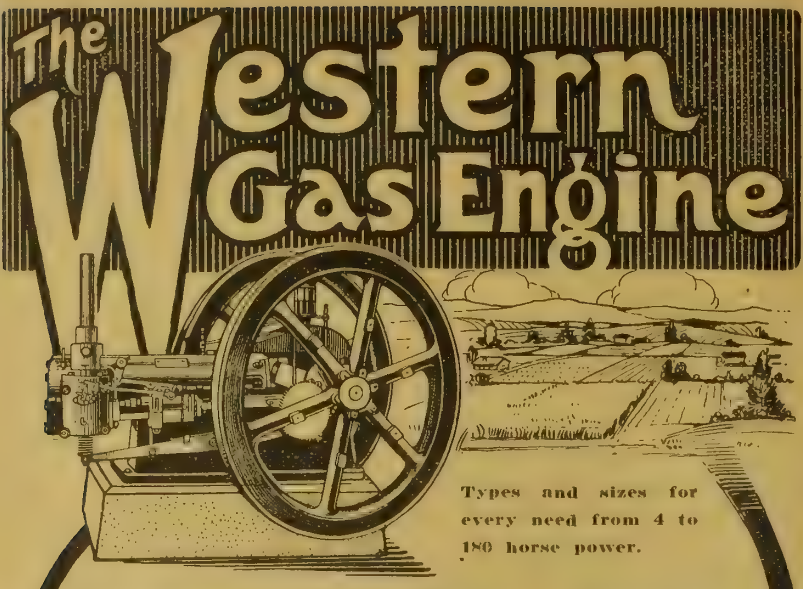
After a night of travel southwards the class stopped at San Bernardino, where the first day was spent in the Highlands district inspecting orchards and visiting packing houses. The following morning a visit was made to the Gate City Ice and Cold Storage Company plant to observe the methods of manufacturing ice and of precooling and icing cars. At Redlands in the afternoon the class studied carefully the basin-mulch system in use on a few orchards, the results of heavy pruning in an orange orchard, the Luffman system of cultivation, the condition of pruned and unpruned trees injured by the freeze and the contour system of planting.

An entire day was spent at the citrus experiment station, Riverside, studying the rootstock experiments, fertilizer plots, cover crops, orchard heater tests and varieties of citrus. The class enjoyed a two-hour session with Dr. Webber, who explained the future plans for the station and answered questions regarding the outlook for the industry, the proper methods of cultivation, the use of mulches in citrus orchards, the application of fertilizers, and the probable causes of mottled leaf.

Under the direction of Mr. Shamel a day's trip to Corona gave the class an opportunity to judge for themselves the value of bud selection and performance records. An experiment in growing an acre of lemons under a tent of tobacco cloth was interesting and seemed to be giving good results, so good in fact that other growers are considering the experiment on a much larger scale. The Flagler Fruit and Packing Company is one of the few in California which uses machine sizers successfully for lemons.

The proper management of a nursery and the growing of citrus trees was studied during the course of a day spent at the San Dimas Citrus Nurseries. Notes on seed bed work, budding, training, heading and transplanting were made while a couple of hours were spent in digging, balling and tying. At present the nursery is handling about 73 per cent of sour stock, 20 per cent of sweet and seven per cent of pomelo. Some excellent notes on the handling, packing and shipping of lemons were obtained at the San Dimas lemon house and a study was made of the equipment and handling of fruit in the orange house.

At Covina the overhead irrigation system proved an interesting study and some time was spent with an "Irish soil sampler" examining the condition of the soil in this and neighboring orchards. The use of buckwheat is quite general at Covina and many other parts of Southern Cali-



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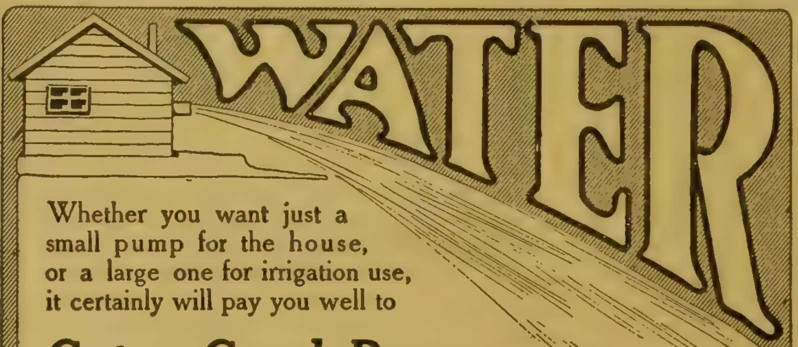

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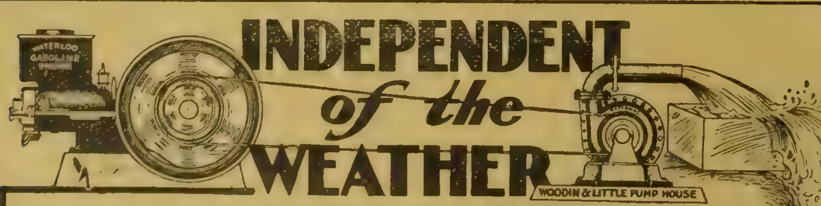

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fornia; while it is giving fair satisfaction it seems desirable to find a leguminous crop which will grow well in summer and root more deeply than the buckwheat.

The pathological laboratory at Whittier was visited and examinations made of the experimental work on crown gall, nematodes and gummosis. An hour was also spent at the office of the United States fumigation investigatons, which has now been transferred to Pasadena. The first real notes on the avocado were obtained at the Magnolia Nursery, where many varieties are being propagated. In addition to the avocado some papayas and mangos have been planted on the higher ground where they show every indication of growing successfully.

A most profitable and interesting day was spent at the West India Gardens, Altadena, studying the avocado, sapote, feijoa, Queensland nut, mango, chayote, cherimoya, guava, persimmon, loquat and papaya: By way of diversion a trip was made in the afternoon to the Huntington estate, where ornamental plants and a five-acre orchard of feijoas were observed.

A good impression of the Orange County fruit districts was gained in an all day auto trip during which we visited the C. C. Chapman ranch at Fullerton, the orange and lemon packing houses at Villa Park, the new citrus plantings at Orange Heights, the C. P. Taft loquat, persimmon and avocado orchard, the original trees of the Sharpless, Monroe, Northrup, Taft, Senor and Rhoad avocados, and the Santa Ana mango.

A morning spent at Hollywood gave another opportunity to study the avocado. The original trees of the Harmon, Miller, Hathaway, Lyon, Royal, Challenge and Walker avocados were seen and notes taken as to the character of the fruit and the productiveness of the trees. The mango and cherimoya trees on the Keith place proved interesting. While in Los Angeles trips were also made to the Los Angeles Ice and Cold Storage Company plant, the American Olive Company mill, the Bradley Fertilizer Works and to the office of the Cultivator, where the students gained inside information as to the handling of an agricultural publication. The greater part of one afternoon was spent at the Exchange, where valuable notes were obtained regarding the operations of the Exchange, the Fruit Growers' Supply Company and the Citrus Protective League.

As a grand climax to the six weeks' trip two days were spent at Santa Paula visiting the Rancho Sespe and the Limoneira. The planting at the former ranch is already quite extensive, 350 acres having been set out during the past five years. Subsoiling 16 inches deep and cultivating ten inches is being practiced, the implements being drawn by a pony caterpillar. At the Limoneira some interesting experiments in mulching the entire surface of the ground are being carried on, bean straw, wood shavings and manure being used for a mulch. Extensive planting is being done on the contour, the land being terraced and trees planted on the edge of the terrace. There is practically no mottled leaf at Limoneira, but some of the trees show typical chlorosis which is seen to be quite distinct in color and form of leaf from the mottling.

In behalf of the students as well as the college of agriculture I wish to thank all those who in any way helped to make this second traveling class such a great success. I want to assure the growers that the students appreciate keenly the fine treatment accorded them in the various sections and hope that they will be able to reciprocate at some future date.

* * * *

VARIOUS METHODS SEEMINGLY SUCCESSFUL

By Ralph G. Ainley

One of the things which has impressed me on this trip is that growers using quite different methods in their orchards are seemingly equally successful. One will advise deep plowing, another shallow; one uses stable manure for fertilizer, while another applies only commercial. Here is a grower using a cover crop and there one who does not. Overhead irrigation is considered best by a few while most use the furrowing method. Then again we meet a rancher who thinks straw mulching should be used with no cultivation in the summer, orchard should be plowed in the fall and planted to a cover crop for the winter. And so on down the list we find various methods in use, each one seemingly successful and satisfying the grower. This is apt to be confusing, but I believe the success in all cases is due to the fact that these groves are given good, consistent care, and as there are such a great number of different conditions of soil and location in the citrus districts of the state, each grower has to work out more or less for himself the practice which is best suited for his location and soil conditions. Of course there are certain principles which are established, but no section is typical of all, and methods good for one section may not be the best for another. The main point in all instances is to study the particular orchard and follow out conscientiously and systematically its care.

* * * *

INDIVIDUAL TREE RECORDS AND ORCHARD CHARTS

By A. L. Chaffin

During this trip I was anxious to find some way in which one might be able to increase the production of fruit per tree, and also produce fruit of superior quality and thus increase the production of our old bearing groves. From observations I noticed that the fruit growers getting the largest yields and also the best quality of fruit have some method of keeping records of the production and behavior of the trees.

By keeping individual tree records the grower is enabled to find out the amount of fruit each tree produces, and by careful observation he can estimate the quality of the fruit. From these two lessons he may be able to figure out why some trees are more profitable than others, and then force the inferior trees to produce more. This may also create an interest in every tree, and the result will be that every tree will soon be bearing a full crop every year. As soon as the grower realizes how many trees in his orchard are really paying him, and how many more there are that he is caring for at a loss, he certainly will adopt some method to make them all profitable. The poor trees which either produce an inferior fruit or are small producers should be worked over with buds taken from the best producers, or if the tree is not sound or has a poor root system it should be removed and a good tree put in its place.

If the grower has only an acre or two he may remember from year to year the behavior of each tree, but for larger areas a chart or plot system should be used. The individual grower may easily work out a practical system for keeping the tree records which will give him valuable information.

Following is a simple system some growers use in making a chart for keeping records. First: Each orchard is numbered; second, beginning from the same place in each orchard number the rows, and then from the same end of the row in each case number the trees in the row. Then on the base of each tree paint the numbers. The top number is the number of the orchard, the middle is the row number, and the bottom is the number of the tree in the row. Likewise, a chart may be drawn of the orchard, and the tree number placed on the chart the same as in the orchard.

When picking, the fruit of each tree should be kept separate, either weighed or the number of boxes recorded with a note of the quality of the fruit. This can be kept in a note book after the number of the tree; any time later the grower may refer to his chart and the figures and find out the behavior of each tree. From the chart it is easy to send out a man to any tree in any part of a grove that may need special care for gummosis, scaly bark, or gophers. Such a system can be applied to any orchard by any grower and at an exceedingly small expense as compared with the increased profits he is able to realize.

* * * *

ORGANIC MATTER ON THE LAND

By H. L. Stambach, Jr.

The presence of an adequate amount of humus and organic matter is a manifest necessity for the thrift of orchard trees and the successful tillage of the orchard.

Dr. Lipman of the University of California tells us that by the present methods of orchard culture more humus is destroyed every year than is added to the land. He states that when a cover crop of vetch of ten tons of green matter, equivalent to two tons of dry matter, is plowed under in the spring and followed by the maintenance of a dust mulch in the summer, that more humus is burned out by the cultivation necessary to the latter than is added by the cover crop. As a remedy for this condition he advises that a mulch of straw or barnyard manure be substituted for that of dust; then the orchard would not be cultivated in the summer and would be irrigated in permanent furrows under the litter; the straw would be removed from the furrows at the time of irrigation. The condition which would result in the orchard from this treatment is compared to the favorable one under an old straw pile.

Mr. D. B. Macoun of the Mills Orchard Company at Maxwell solves the humus problem in an original way. He mows a mixed crop of barley and oats in the spring in his young lemon orchard. Under this curing straw he irrigates three times during the summer in ten inch furrows. Although his soil is rather heavy, it was found by our class to be in good physical condition with no plow sole. His duty of water is three miners inches to five acres. He plows in the fall. Mr. Macoun's trees are in good condition and he intends to use no commercial fertilizer, believing that his soil is rich enough for production if maintained in good condition.

Mr. Robert Thompson of Highlands has another method of going after the humus question. He took his orchard in charge when the trees had much mottle leaf and when an impenetrable plow sole was to be found six inches below the surface of the ground. He applied 30 tons of calcium carbonate to the acre and began to grow cover crops continuously throughout the year, a winter crop of vetch and two summer crops of buckwheat. He now applies 20 tons of lime to the acre every third year. He uses no barn yard manure, but makes heavy use of commercial forms. He uses much water. His trees when visited by our class seemed to be coming back into condition; we were able to work a King's soil tester five feet into the earth, finding moist dirt there.

Mr. Leffert of Redlands favored a system of continuous mulching. We found his trees in basins; these were filled with a straw mulch. The basins were of such size that they only included the ground under the drip of the trees. The land between the trees and outside of the basins is in alfalfa. Mr. Leffert states that a cultivating tool shall never again enter his orchard. His trees seemed to be in better condition than his neighbors and certainly had an excellent crop set; he had no plow sole.

* * * *

RELATION OF QUALITY AND PROFIT IN THE ORANGE INDUSTRY.

By L. F. Durfy

During our recent trip through the citrus districts of the state I was greatly impressed by the fact that the profits received for oranges this year have been exceedingly small despite the fact that the crop has been as good if not better than the average.

The question as to the cause and remedy of the prevailing low prices is naturally of great importance to the grower, so it may be of interest to briefly summarize some of the facts concerning the present orange market.

In the first place the problems of increased competition, overproduction, etc., suggest themselves. It is undoubtedly true that the rapid increase in production of oranges in Florida, Cuba and the Isle of Pines has influenced to some extent the price of the California product, but investigation will show that this factor is only partially responsible for the present low returns.

The real cause seems to be one of a more or less temporary nature due to the setback given the California industry by the freeze and the consequent advantage gained by the Florida product. Immediately following the freeze it was almost impossible to completely separate the good oranges from the frozen and as a result considerable fruit of poor quality was placed on the market. This naturally injured the reputation of California oranges and gave Florida fruit the preference on many eastern markets.

In order that California oranges may regain their position in the market it is up to the producer to put out a fruit of a uniformly high quality. If he can maintain a reliable standard there should be little fear of competition, for it is generally conceded that the California navel is far superior to the oranges of other countries.

Another factor which has no doubt lessened the demand for California oranges is the practice in some sections of the state of shipping immature fruit. An illustration will serve to emphasize the point. In one of the orange districts north of the Tehachapi certain growers, not members of the association, sold their fruit to dealers who came in as early as October, picked the fruit while still green, sweated and shipped it to eastern markets where they received good prices for the early shipments. The association members, on the other hand, allowed their oranges to remain on the tree until sufficiently mature, but when it arrived on the eastern markets there was practically no sale for it because the green fruit, shipped previously, had killed the demand for oranges from that locality.

As a suggested remedy for the green orange problem, would it not be to the interest of the growers to cooperate and agree to hold their fruit until sufficiently ripe? By shipping the oranges for the Christmas market, instead of striving to get them all off before Thanksgiving, they would still be ahead of the Southern California crop and at the same time would be marketing a product of better quality than at present, which would mean, naturally, better prices and larger profits.

From the above instances we see how important a part quality plays in the orange market and that better prices can be obtained by the establishment and maintenance of a more uniform standard. This is being done to a large extent through the excellent work of the exchange and the more efficient methods being adopted by growers and packers. If the producer will back up this movement he may soon expect a more satisfactory income.

* * * *

CITRUS DISTRICTS IN CALIFORNIA

By L. E. Thomas

That the citrus industry of California is in three sections, each at a different stage of development, is apparent to anyone who looks into the situation at all carefully. These three sections may be classed as the fully matured and most prominent section of the south; the young though well developed section of Tulare County, and the new and promising section of the northern Sacramento valley.

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You will get them all, at the Goodyear price, if you ask your dealer for No-Rim-Cut tires. Any dealer can get them quickly if your size is not in stock.

GOODYEAR
AKRON, OHIO
No-Rim-Cut Tires
With All-Weather Treads or Smooth

THE GOODYEAR TIRE & RUBBER COMPANY, Akron, Ohio
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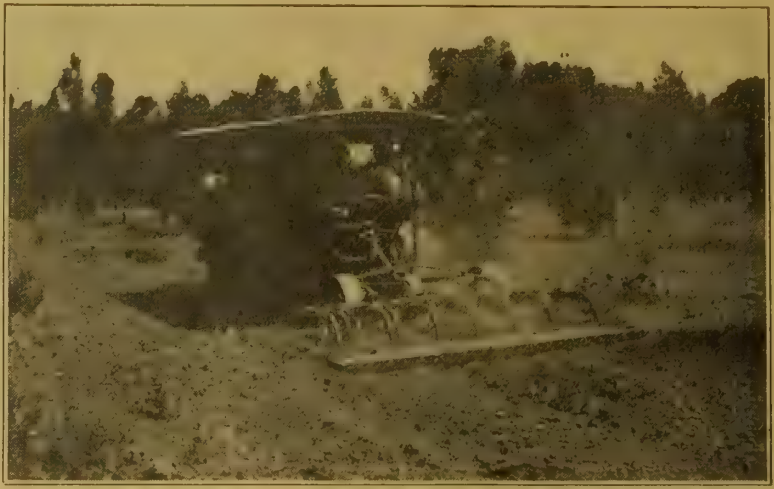
Branches and Agencies in 103 Principal Cities Dealers Everywhere Write Us on Anything You Want in Rubber

much is yet to be expected. Land is high in price, water expensive and crop pests very numerous. This is to be expected in a country so long given to one main crop. The climate with the social development make it the most charming of the three districts in which to live.

The Tulare district is generally speaking about ten years old. This makes it easy to predict what its possibilities as a citrus district are. Land is a trifle cheaper than in the south; water perhaps less expensive and crop pests are not so numerous. Plantings for the last six years or so have been at the rate of 3,000 acres per year in Tulare County. There is much land yet to be planted. Aside from the high summer temperatures the climate is most desirable.

The true northern Sacramento Valley district is the one so little known or understood. On the east side of the valley in the Oroville district there are some fairly good groves. The better soil is to be found on the west side of the valley, extending from Tehama on the north to Arbuckle on the south, a distance of about 75 miles. There are but a few citrus groves here, but the whole district is open to citrus planting with safety. The soil is generally good, water by pumping abundant at easy lifts and prices of land about the most reasonable of any in California. This then is the most promising district for future development.

The important questions as to yields, quality of fruit and frost conditions of this district have been carefully considered. On the authority of specialists and those most qualified of any in the state to answer these items we have the following opinions. Yields per acre will equal those of southern groves under the same conditions if the same good management, care and wisdom is used. The quality of fruit is on a par with the best that can be produced in the south, if the fruit is allowed to properly ripen. The period of ripening is from four to six weeks ahead of the same period in the south. As to frost the district is thought to be equally as safe as the southern citrus district.



A Ventura County Iron Mule Doing Thorough and Deep Work

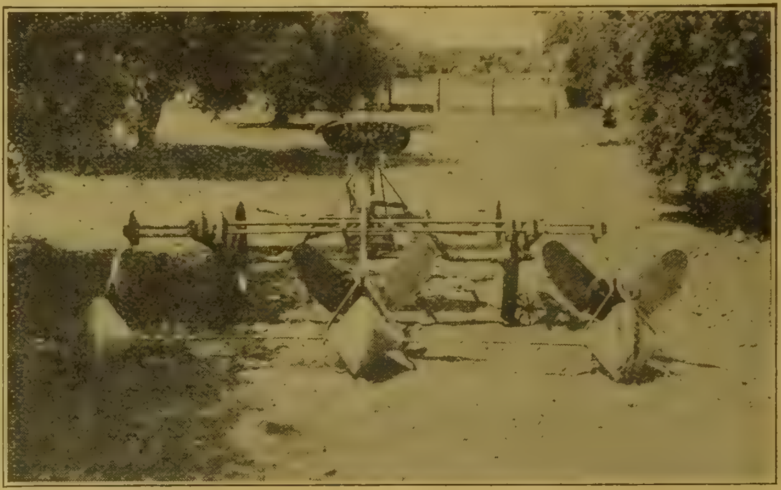
Climatic conditions are about the same as those in the Tulare district, being hot in the summer months. With the added possibilities for future development and present favorable circumstances for making a start the advice to anyone contemplating the raising of citrus fruits is to first investigate this northern Sacramento valley district before settling elsewhere.

* * * *

IMPROVE ORCHARD IMPLEMENTS

By Harry Sargent

Mr. A talks about orchard fertility. Mr. B about studying your local conditions, but who ever dreams of improving the orchard implements? First, be sure and purchase the simplest and most efficient machinery possible, second, study your implements and note the experiences of your neighbors so as to perfect those implements you already possess.



Appliance for Crushing Clods and Smoothing Irrigation Furrows

Cultivation is termed necesary by all leading orchardists in order to keep the soil in the best physical condition. This may be accomplished in numerous ways, but the best are none too good.

One hundred and sixty acres of fruit should support a tractor to do the cultivating, sub-soiling and heavy hauling. And when extensive ditching or underground flume work is to be done a caterpillar ditch digger which will dig 4,000 feet of three-foot trench per day is comparatively inexpensive and very useful. The average orchard in this state is too small to support such extensive machinery as mentioned above, and in these cases the horse implements are the only solution.

A circular harrow is of great importance as it leaves the weeds and trash out at one side and easily works up near the body of the tree.

The horse cultivator should be purchased with great care, as our markets are swamped with useless implements. Some are better adapted to certain sections of the state than others and the best can only be chosen after very careful study. The doubletrees should be short so as not to injure the trees. All perpendicular levers are useless; it should be built low. If cultivation underneath the tree is desired, a horse cultivator may be devised by which the man and horse are set out at one side, permitting the plow to go under the tree.

Heavy soil is very difficult to get into shape for irrigation so that some kind of a clod crusher attachment (made of concrete or iron or other heavy material) is advisable to use behind the marker. If the soil is too loose a piece of metal may be fastened to the beam just above the marking share to prevent the soil from rolling over the share and filling up the furrow.

A piece of rubber hose, boot, or auto tire, may be easily attached to that part of the various implements to prevent severe searing of the trees. A round piece of wood, such as a wooden wheel to a toy wagon, may be rimmed and the top covered with rubber and attached to the outer end of the cultivator or harrow with great success If this is not possible a rod may be attached with one end to the outer end of the beam and the other to the doubletrees or draw chain and this wrapped with rubber.

All trees should be balled with longer tap roots than has been practiced of late, and this may be done very easily and rapidly by use of a spade with a very long blade.

Sub-soilers should be constructed of the very best steel of considerable thickness. If such implements are not on the market have them made to order, as it will save time, labor and expense.

Legal

Edw. L. Payne, attorney, 301-304 Douglas Building, Los Angeles, will answer legal queries in this department.

Immediate mail replies cannot be given except where fee to Mr. Payne is paid. When replies are wished in Cultivator address query to 115½ N. Broadway, Los Angeles.

Fence Over Line

How can I make my neighbor move his fence? It is 10 feet over on my line. Was put up four years ago. I have the two corners. Must I have it surveyed again or can I measure it and make him move If I have to survey can I make him pay for it?—Subscriber, Haywards.

If your neighbor will not join with you in a friendly effort to locate the division line and agree upon the same, it will be necessary for you to bring suit against him to quiet title to the 10-foot strip in dispute. Your lawyer in that case would have to decide whether or not the evidence you mention is all he would wish to establish in court your division line in the place where you think it is; it would seem sufficient to me if you can locate one of the corners according to the record and survey from that, either yourself or with the aid of a regular surveyor. If you are obliged to survey you cannot compel your neighbor to pay for it.

Figuring Time

A rents a team of mules from B, agreeing to pay him $20 per month and board. A receives mules on January 30 and turns them back on April 17. B claims that A owes him rent for two months and 19 days. A says he owes him for only two months and 17 days. A claims that from January 30 until March is one month. B says it is one month and two days. Who is right?—Subscriber.

The word month when used in commercial transactions means a calendar month unless otherwise specified in the contract. If A received the mules on the morning of the 30th in time to use them all day, that would be figured one day, January 31 would be two days, February and March would each constitute a month, making two months, and if the mules were used all day of April 17 the total aggregate time would be two months and 19 days. If the parties care to figure the matter very accurately they have the right to figure fractions of a day. Thirty days is arbitrarily used in figuring fraction of a month.

We note in an exchange complaint that many eastern florists have raised the price on flowers, especially at Decoration Day, to such an extent as to necessitate the purchase of metal and everlasting wreaths. It has been a common practice with florists to secure the announcement through papers some time in advance of a special demand that there was a great scarcity of flowers, this to induce a scramble, or early orders, and enable them to secure long prices. While this has been accomplished to a certain extent, the practice has caused patrons to order vast quantities of manufactured stuff, and tons of fine natural flowers have rotted for want of purchasers. No matter what the product may be the public will not stand for these practices.

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—and know what you are planting. Teague trees are better than others because scientifically grown. They are started right, grown right and shipped right. Ask for quotations.

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Teague trees are well rooted, strong and thrifty, free from scale, guaranteed true to name.

OUR BOOK "CITRUS FRUITS" — handsomely illustrated; a wealthy fund of accurate data —sent for 25c in stamps.

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Finely finished, black and nickel, 11 inches long, fits any car, 9 feet wire, terminals, push button, universal bracket. Loud noise, low price. Thoroughly guaranteed one year. Shipped anywhere prepaid. Money back without question if you don't like it. Tremendous value and adds style to any car. Other styles at $3.90 and $4.90. Style shown here, $5.90. Send today. Immediate shipment. Try it out and if you don't like it send it back and get your money. We pay all expense. Remember this horn is sold by a concern established here in 1892.

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Deciduous Fruit Culture

THE DROPPING OF FRUIT

Written for the California Cultivator
By Albert M. Paul

During the recent Fruit Growers' convention at Davis there was passed a resolution, the object of which was to seek information leading to the causes of the excessive dropping of fruit this year.

In the course of our work we have recently made investigation into this matter for Mr. George H. Cutter, president of the California Fruit Exchange. The results, which Mr. Cutter kindly permits us to use, while not absolutely conclusive, nevertheless give valuable data and lead to at least one possible solution of the problem. Cutter Brothers own and operate a well managed, productive peach, pear and plum orchard on the American River bottom lands, east of Sacramento. In common with other orchards examined by us this season, a considerable amount of dropped fruit was evident on this property in spite of good care and attention. Our investigation brought together evidence which indicates that in this case the dropping of fruit was due, at least in great part, to the lack of sufficient available nitrogen at the time when the tree was making its greatest draft on this resource.

Now, though this dropping of fruit was due to a deficiency of available nitrogen, this deficiency was indirectly traceable to climatic conditions. Our analysis of the soil showed it to contain a sufficient amount of total nitrogen to produce a crop under normal climatic conditions, but there was far from sufficient available nitrogen to balance the retarding influence of this spring's excessive moisture.

This condition was investigated by us on April 24 of this year, at which time soil samples were taken to a depth of six feet, and, upon analysis, the soil shown to contain an average amount of but 34 pounds per acre of available nitrogen in the form of nitrates. When one considers that the peach tree in producing its normal crop removes from the soil approximately 84 pounds of nitrogen per acre per year, it is readily seen that without additional supply from one source or another the tree is bound to suffer. It is a well known fact that the tree draws most heavily upon this valuable resource during the setting of the fruit and later during the formation and development of buds for the following year's use.

Furthermore, we know that aside from the soil's natural fertility it may have three additional sources of nitrogen supply upon which to draw, viz: Artificial application of nitrogenous fertilizer of the commercial variety; the turning under of green manure; nitrogen obtained from the air through the agency of nitrifying bacteria.

While there remains much to be learned about soil bacteria which affect nitrogen yet we do know that they may be roughly divided into two classes, i. e., beneficial or nitrifying bacteria and harmful or denitrifying bacteria. The former actually produce nitrogen in a form available for plant consumption, while the latter destroy this valuable plant food. Still another point which has been well established with reference to these minute organisms is the condition under which each thrives. The harmful or nitrogen destroying variety, as borne out by our investigations, thrives only in excessively wet, cold, poorly drained or acid soil, while the beneficial bacteria thrive only in well drained, warm, sweet soil and must have plenty of air from which the resultant nitrogen supply is derived.

Had this spring, particularly at the time of the setting of the fruit, been a warm, open season, instead of an unusually wet one, the conditions controlling nitrification by bacterial action would have been reversed. And had there been an abundance of nitrates in the soil, i. e., a sufficient amount to overbalance this retarding influence exerted by the prevailing climatic conditions, the evil effect would not have been evident.

In order to show the great value to the soil of bacterial activity the following is of interest. In one gram of the Cutter soil there were approximately 100 million bacteria weighing about one-tenth of one milligram. This would give for each acre of soil to a depth of two feet 800 pounds of living bacteria. The volume of carbon dioxide evolved by these bacteria through the decomposition of organic matter may reach a volume per year of 3000 cubic yards. This gas, spread over the surface of any acre, would cover it approximately 22 inches deep. From these figures one can readily see that such bacterial activity is by no means to be neglected, and that where it is interfered with by seasonal conditions the fertility of a soil with a small margin of nitrate present, may readily become very much impaired.

Our investigations thus lead us to conclude that if dropping of fruit is to be avoided, in as much as we can not be independent of climatic conditions, the grower must see to it that his trees are sufficiently well supplied with nitrogen to overbalance any retarding influence an excessively wet season may have upon the bacterial activity which would take place under normal conditions.

DON'T SHIP GREEN GRAPES

The state board of viticultural commissioners has issued a bulletin warning against shipment of immature grapes. The bulletin says in part:

"To the Growers, Packers and Shippers of California Table Grapes:

"Let us have your hearty cooperation this year and at once in the matter of an attempt to better our table grape markets in the United States and Canada the coming harvest season.

"The viticultural commission of California believes, after thorough investigation, that hasty shipments of unripe table grapes into the Eastern markets are doing us an injury in returns to the extent of $500,000 per annum.

"Let us get together this season and stop the practice. We advise that no table grapes be picked and packed until they test 17 per cent in sugar.

"The Western Fruit Jobbers' Association of America is with us in this effort, and promises fullest support. The California handlers of our grapes are agreed that the movement is right and will be productive of good results.

"Let us all show that legislation will not be required to make us do what is for our own good and for California's reputation as the state producing the best table grapes in the world.

"The crop is big. Estimates indicate that it may reach a total of 8,000 carloads, or nearly 2,000 more than went east last year, in the event that damage does not come to the crop between now and the harvest season.

"Notwithtanding this condition, the markets should be good if we are careful of what we send. The deciduous fruit of the East and North, which in a measure competes with our exports from California, is not up to normal. In the North, pears, at the present writing, are not 60 per cent of last year's crop. Italian prunes are scarcely one-third of a normal crop. Peaches are good and the apple crop immense.

"In the East, Georgia expected 5,000 cars of peaches and will not have over 3,000. New York state and Connecticut had 5,000 cars to ship last year, and their crop is a failure this year. They will not have enough for local use. These crops do not come into the markets in vigorous competition with our grapes, but the shortage is a factor in general marketing conditions in the East this year.

"The first table grapes left Imperial Valley in June, and everything points to the use of utmost care in the matter of picking at the proper time when the sugar content is sufficient.

The Western Fruit Jobbers' Association of America at their annual convention in Kansas City, last February, adopted the following resolution:

"Resolved, That we, the Western Fruit Jobbers' Association, in convention assembled this sixth day of February, 1914, do proclaim that we are in hearty accord with the work of the viticultural commission of California, and will do everything in our power to cooperate with the commission in an honest and earnest endeavor to have abolished entirely the practice of shipping green and unripe table grapes out of the state of California and into the hands of the members of our association.' "

"This means that the shipping companies handling the table grape crop in California, and the distributors receiving our carloads in the eastern centers, are a unit in favor of the establishment of a minimum sugar standard for our grapes, and will cooperate with us to that end.

It is claimed by one firm, enthusiastic over the effort we are making, that $500,000 would be the additional yield of the table grape crop if there were a strict regulation enforced at the shipping point so far as the sugar content of the grape is concerned. One distributing house aptly describes the unfortunate result of hastily harvesting and shipping by declaring that the first grapes have left 'a sour taste in the consumers' mouths,' and that they shy away from California grapes for two or three weeks, thus hurting the market when the grapes are in thoroughly good condition. Skepticism has, therefore, spoiled the market for worthy offerings that come later.

"The membership of the Western Fruit Jobbers' Association includes practically every fruit shipping concern in this state and most all of the eastern distributors of our table grapes and deciduous fruits. Therefore, we have gained one big point in our attempt, and all that we need now is the support of our vineyardists who grow these table grapes.

"The grapes that are most apt to mislead the consumer are those of green cast. The yellow tinge when the berries are well along in sugar is overlooked, and the consumer will bite into the grape believing it is in condition to eat. He will find that it is very sour, and that will be the end of his grape buying for several days. Necessarily this experience puts a damper on the consumption and the market for a certain period of time, during which other grapes may arrive in the same market in very good condition. The demand ceases temporarily on these better grapes, and the shippers who forward them experience poor results.

"Not so much trouble is experienced with grapes that show some touch of color when they are nearing the ripening period. This is particularly true of the Tokay; although it is also a fact that in some of the southern districts of the state the Tokays are well along in sugar before they show the flame, or red color. In the south we find the Tokay grapes with scarcely any color at all even when they are quite ripe; while in the north, in the Sacramento and San Joaquin valleys, the reddish tinge appears early. As said before, however, the Malaga, Muscat, Thompson's seedless and other varieties of the greenish cast are the ones that are most apt to deceive the consumer.

"The viticultural commission believes that table grapes should not be offered for sale until they have attained at least 17 per cent in sugar."

APPLE SHOW

The big apple show heretofore held at Watsonville will this year be at San Francisco, October 1-11. The management will erect three tents at Market and Eighth Streets, and expects to obtain wider publicity for apples and apple products than is possible at a home show.

Of the 30 apple producing counties in California, seven already have accepted Watsonville's invitation to take part in the fifth annual show. San Diego was the first county to respond and will reproduce in apples a large section of the 1915 San Diego Exposition. Other counties which will send the finest apples their trees can be persuaded to bear are Monterey, Inyo, Napa and San Bernardino, including the Victor Valley apple district, which took many prizes at the show in Watsonville last year. "I am more than pleased at the way the replies to our invitation have come in," said Manager Perkins. "Every one of the counties accepting our invitation to exhibit not only is enthusiastic over the Watsonville enterprise which brought the big show to San Francisco this year, but is planning to make larger and more beautiful exhibitions than ever before. In fact, I feel certain that the October show will be the most beautiful fruit exhibition ever held. The value of beauty is being emphasized, and we are offering special awards for the most attractive feature displays."

"CARRYING ON" THE BUSINESS

"I understand that you and your son are carrying on the ranch business together," remarked Mr. Homespun. "Yes," Mr. Rangely replied sadly. "I look after the business and he does the carrying on."

FORAGE CROP YIELDS 100 TONS TO THE ACRE

Will grow on arid and semi-arid lands, without irrigation.

One acre planted to this new forage plant will keep from two to four dairy cows in good condition. It is said to be the greatest milk producer of all forage plants. As a fattener for beef, forage plants. As a fattener for beef cattle and hogs, it is claimed that this new forage plant has no equal. Many claim that it will lower the cost of living, by lessening the cost of producing such staple articles of diet as beef, butter and bacon.

The plant referred to is none other than the Luther Burbank Spineless Cactus. A booklet has recently been compiled which contains a lot of valuable information about Cactus, and which shows the results of a number of feeding tests. If you will write to the El Campo Company, Dept. C, 211 Story Building, Los Angeles, Calif., a copy of the booklet will be mailed to you free.

BURBANK'S SPINELESS CACTUS

Absolutely genuine. You can make big profits from this wonderful plant.

Ideal hog and cattle feed.

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Our prices are attractive.

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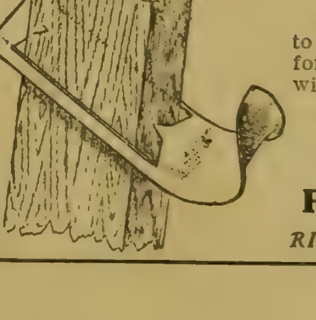

Have a smooth, rounded surface for the limb to rest upon. Strong, well made and will last for years. Will not chafe the tree like the wire brackets.

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We want the alert enterprising farmers who see this magnificent opportunity. So we make the most liberal terms. Take 20 years to pay. Call on us for long time loan of $2000 for farm improvements if you want it. Investigate now. This block will soon be the most densely populated and intensely cultivated district in the west.

You Can Have 20 Years to Pay

We will sell you this rich, irrigated, Canadian land for $35 to $75 an acre. You need pay only one-twentieth down. Think of it—only one-twentieth down, and then the balance in 19 equal annual payments. Long before your final payment comes due, your farm will have paid for itself over and over again. Many good farmers in Western Canada have paid for their farms with one crop. Here are some of the startling features of the most remarkable land offer you have ever read:

We Lend You $2,000 for Farm Improvements This offer of a loan up to $2.000 is for farm development only, with no other security than the land itself, and shows our confidence in the fertility of the soil and in your ability to make it produce prosperity for you and traffic for our lines. This loan will help you in providing buildings, fencing, sinking well and breaking, and you are given twenty years in which to fully repay this loan. While enjoying the use of this money, you pay interest at only 6%.

Advance Live Stock on Loan Basis The Company, in case of the approved land purchaser who is in a position and has the ability to take care of his stock, will advance cattle, sheep and hogs up to the value of $1,000 on the basis of the settler's note with interest at eight per cent, to enable him to develop more rapidly, on the right basis of mixed farming.

Farm Made Ready by Experts if Desired If you want a place already established, select one which our Department of Agricultural Experts has developed. On our improved farms, house and other buildings are up, well is dug, farm fenced, fields cultivated and in crop. All waiting for those who want an immediate start and quick results—all planned and completed by men who know our own agricultural experts. Take twenty years to pay if you want to. We give *free* service—expert service—the valuable assistance of great demonstration farms, in charge of agricultural specialists employed by the Canadian Pacific for its own farms. This service is *yours*—free

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Spineless Cactus HAVE YOU SEEN IT GROW? HAVE YOU SEEN IT FED?

One dairyman near Los Angeles produced over 40 tons off one acre first year. Owing to demand for plants he can sell them for a handsome profit. Will you be the first to demonstrate its growth and value in your community?

For further particulars concerning genuine Burbank varieties address Wm. W. Shigley, Suite 228-9, 702 So. Spring St., Los Angeles, Cal.

Occurrence of Frosts and Freezes

Historical Cold Periods in California and Florida Described by Mr. Carl Nichols

This is the season of the year when there should be the greatest interest in the discussion of frost protection. It is the season when orders should be placed for appliances and supplies and when care should be taken of appliances already in the orchard or storehouse. Large investments have been made in frost protection. During the 365 days of the year it is probable the appliances will not be used more than four or five, but the necessity for having them in perfect working order is just as great as if they were to be used daily. A bit of carelessness at this period of the year might mean the entire loss of the orange or lemon crop. Are the fire pots coated to protect from rust? Are the cans, the tanks, the reservoirs kept in hand so there is no leakage of fuel? These questions will afford opportunity for discussion during the next few weeks. As a preliminary article we are glad to give the following from the thesis prepared by Mr. Carl Nichols when he was a student in the state university. The entire investigation of Mr. Nichols is reported in some 200 pages of manuscript, and of course we cannot give it all. The portion touching upon recorded frosts which we publish this week is most interesting. Later we will quote from other and perhaps more practical portions of Mr. Nichols' manuscript.

Historical Cold Periods

In Blodget's Climatology, published in 1857, we find mention of a cold period as early as 1748, which caused considerable damage to the tropical fruits of the South. Again in January, 1766, frost destroyed all tropical fruits, except oranges, in Northern Florida, a minimum temperature of 26 degrees F. being recorded on the St. Johns river. In 1780 a severe cold wave swept over the country, this being one of the worst known in the entire history of the land. In 1800 another period of excessive cold was experienced in the southern states. Severe storms of sleet and snow occurred in Louisiana, and in January, 1800, a heavy snow fell in New Orleans, with general and severe injury to tropical fruits and tender growths.

Of the freezes usually spoken of as "the great freezes," the first occurred on February 7 and 8, 1835. Tropical fruits were killed which had been uninjured for more than half a century. On the St. Johns river, five miles from Jacksonville, Florida, evergreen oaks shed their leaves from the frost; orange trees were split to the ground and killed, roots and all, at St. Augustine and Mandarin, some of these trees being 40 or 50 years old. The thermometer at Jacksonville, it is said, fell to eight degrees F.

In January, 1852, snow fell at Charleston and Jacksonville. At Charleston thick ice formed for several days, and many orange trees were killed. Again in March, 1876, destructive frosts visited the gulf states, killing orange and other fruit trees in northern Florida. In 1882 a severe cold period was experienced in California, a minimum of 21 degrees F. being registered at Fresno. Ice was formed in Los Angeles and the surrounding hills were covered with snow.

The second "great freeze" in Florida came on January 12, 1886. The lowest temperature for many years was felt in the South, with resulting great losses to agricultural and fruit growing interests. In Florida the estimated damage to crops was $3,000,000. Most of the orange crops were destroyed, young orange trees were killed and old trees were frozen back to a considerable extent. It is worthy of notice, however, that the damage was mostly repaired by the following season, when the crop was larger than ever before.

In January, 1888, the temperatures on the Pacific coast were the lowest which had ever been recorded; killing frosts occurred and ice formed as far south as San Diego. Again in 1891 a cold wave appeared on the Pacific coast, injuring oranges and nursery stock in California and Arizona. Ice one-half inch thick formed in shallow pools about San Diego, and in Mission Valley oranges were frozen badly.

The third "great freeze" of the Florida citrus regions came in the winter of 1894-95. To be accurate, there were two distinct cold waves, the first appearing during the latter part of December, 1894, and the second during the early part of January, 1895. Injury to the fruit industry was very great, oranges, lemons and many other tropical trees being killed to the ground. Only in the extreme northern portion of the state, on the keys, and in certain well protected districts in the central portion of the peninsula, did the trees escape with but little injury. In fact latitude was found to be the only modifying influence of importance, the blizzards as they swept southward gradually decreasing in severity.

The first great blizzard, commencing on December 27, 1894, reached its climax on the 29th when the temperature fell to 14 degrees F. at Jacksonville, one degree lower than during the great freeze of January 12, 1886. A strong wind, accompanying the lower temperatures, attained a maximum velocity of 25 to 30 miles per hour. Killing frosts occurred for three days in succession throughout the northern and central parts of the state. The weather following this first freeze was clear and comparatively cold for several days.

Fine growing weather preceded the second freeze for a period of two weeks, the night temperature not falling much below 50 degrees and the day temperature rising as high as 80 degrees. This resulted in a rapid growth of new wood on injured citrus trees. On February 7th, when the second freeze commenced, the new growth had reached a length of one to four inches. Flower buds were forming and the growers were much elated that the trees had shown such marked resistance to low temperatures. With such conditions prevailing before the freeze the temperature fell to 14 degrees on the morning of February 8th at Jacksonville; the temperature throughout the orange belt generally ranged from 15 degrees to 19 degrees. As a result many of the trees, now stripped of their normal dense foliage, were unprotected from the cold blast and were killed to the ground, young and old alike. The second freeze, like the first, was accompanied by a strong wind with a maximum velocity of 30 to 35 miles an hour. On February 8 and 9 snow and sleet fell in various parts of the northern and central sections of the state. The weather after this freeze was cold and clear for several days.

It is worthy of note that these two freezes showed but slightly lower temperatures than those of 1886. Consequently neither alone would have done much more damage than the latter freeze; the extremely disastrous effects were due to the fact that the freezes occurred so close together.

In December, 1895, severe frosts occurred in Southern California, injuring nearly 50 per cent of the orange crop. The frosts of this month caused great interest to be taken in frost prevention devices, and numerous experiments were started by the Riverside Horticultural Club, in cooperation with the United States weather bureau, to determine the relative values of such devices as were then known.

In February, 1899, one of the most remarkable cold waves in the history of the weather bureau traversed the United States from the North Pacific to the South Atlantic, damaging crops to the extent of millions of dollars. At Jacksonville, Florida, a minimum of 10 degrees was registered during this freeze. In Southern California much damage was done to citrus fruits. It was during this cold period that 150 acres of lemons on the great Limoneira ranch in Ventura County were frozen back to the trunks.

In December, 1911, a disastrous cold period extended over Southern California from the 19th to the 20th, the cold culminating on the night of the 26th, when a maximum temperature of 19 degrees F. was recorded at San Bernardino. This freeze resulted in a loss of about $5,000,000 to the citrus industry.

In January, 1913, the most severe cold spell passed over California that had been experienced since January, 1888, and in the southern part of the state the temperature was lower than had been known for a period of 60 years. Heavy frosts occurred on January 4, 5, 6, 7 and 8. Strong winds preceding the frosts came from the north-northwest rather than, as usually happens, from the north-northeast. The wind began to blow shortly after noon on January 4 and continued until 3 a. m. on January 6. Instead of the usual draft through the Cajon Pass at an elevation of 3823 feet, the winds came directly over the Sierra Madre range, whose elevations exceed 6000 feet. During the midday hours on the 4th, 5th and 6th the temperature did not rise much above 50 degrees F., and in some places did not reach 50 degrees F.; that is, it was 30 degrees lower than the normal midday temperature. Apparently the whole mass of air to an elevation of several thousand feet was at a low temperature. The wind was extremely dry.

During this freeze the fruit was subjected to temperatures below freezing for four successive periods, averaging four hours for the first, 13 hours for the second, 13 hours for the third, and nine hours for the fourth; in all, during a total period of 72 hours, during which under normal conditions the plants would have received a supply of heat approximately represented by 1500 hour-degrees, starting from a temperature of 40 degrees F., they only received 220 hour-degrees. There were 170 hour-degrees below freezing, and of these 50 were below 25 degrees F. In a general way there were 30 hours when the temperature was below freezing; 12 hours when it fell as low as 25 degrees F., and two hours when the temperature did not exceed 20 degrees F.

Minimum temperatures of 13 degrees F. were recorded at Escondido; 16 degrees F. at Chino; 17 degrees F. at Pomona; 18 degrees F. at Redlands and San Bernardino; 21 degrees F. at Riverside and Pasadena; 25 degrees F. at San Diego.

Season of Frost in California

With citrus fruits the frosts of December, January and February are the ones to be most guarded against, as then a large part of the crop is ripe and ready for shipment. With deciduous fruits the late spring frosts do the most damage. Almonds, apricots, grapes, peaches and prunes are hurt while in bud or while the fruit is just setting by the frosts of March and April. The damage probably depends as much, or more, upon the condition of the tree as upon the degree of cold. Often a sharp frost during the first part of April does less damage if the trees are fairly past the blooming period than the same frost would have caused had it occurred about the middle of March.

The following table gives the dates of first and last killing frosts for a period of 11 years at various places in California. Elevations in feet above sea level are given, but it must be remembered that frost occurrence is as much dependent upon conditions of topography affecting the movement of cold air currents, etc., as upon actual elevation.

Spring and Fall Killing Frosts, 1897-1908

Location	Elevation	Latest spring	Earliest autumn
Upper Coast Region—			
Eureka, Humboldt County	64	May 1	Nov. 7
Ukiah, Mendocino County	620	May 2	Oct. 16
Cloverdale, Sonoma County	340	Mar. 25	Nov. 2
Santa Rosa, Sonoma County	181	May 10	Oct. 29
Napa, Napa County	60	Mar. 30	Nov. 7
Sacramento Valley and Foothills—			
Redding, Shasta County	552	May 1	Oct. 17
Chico, Butte County	193	Apr. 10	Nov. 6
Oroville, Butte County	250	Apr. 30	Nov. 23
Davis, Yolo County	51	Apr. 4	Oct. 22
Sacramento, Sacramento County	35	Apr. 26	Oct. 17
Nevada City, Nevada County	2580	May 30	Sept. 29
Central Coast Region—			
San Francisco, San Francisco County	207	Mar. 27	Dec. 18
Berkeley, Alameda County	320	Feb. 19	Dec. 14
San Jose, Santa Clara County	95	Apr. 9	Oct. 22
Santa Cruz, Santa Cruz County	20	Apr. 1	Nov. 23
Watsonville, Santa Cruz Co.	23	Apr. 8	Sept. 22
Salinas, Monterey County	40	Apr. 1	Nov. 21
San Luis Obispo, San Luis Obispo County	201	May 18	Oct. 18
San Joaquin Valley—			
Antioch, Contra Costa County	46	Feb. 1	Dec. 5
Lodi, San Joaquin County	35	Apr. 9	Oct. 18
Fresno, Fresno County	293	Mar. 31	Nov. 11
Tulare, Tulare County	274	Apr. 11	Oct. 20
Southern California—			
Santa Barbara, Santa Barbara County	130	Mar. 18	Nov. 30
Santa Paula, Ventura County	350	Feb. 16	Dec. 12
Los Angeles, Los Angeles County	293	Mar. 9	Dec. 13
Anaheim, Orange County	134	Apr. 17	Dec. 12
Riverside, Riverside County	851	Apr. 2	Nov. 12
Redlands, San Bernardino County	1352	Apr. 9	Nov. 24
Escondido, San Diego County	657	Mar. 18	Dec. 7
Mountain Regions—			
Sisson, Siskiyou County	3555	July 6	Sept. 13
Greenville, Plumas County	3600	June 11	Aug. 20
Cuyamaca, San Diego County	4543	July 11	Sept. 5

THE COMING SUGAR BEET HARVEST

Written for California Cultivator

By Percy L. Edwards

The coming sugar beet harvest on the Pacific coast will show Southern California producing practically the entire crop. On account of the action of beet sugar manufacturers following the tariff changes and the refusal of growers in some sections to accept the reduced price offered for the beets, the principal operations this year are confined to Southern California.

Growers of sugar beets in Southern California have for some years past regarded this crop as one of the best money makers and at the same time a valuable aid to soil productivity. So when requested by the factory management to accept the reduction in price per ton, about 40 cents, they accepted the terms of the manufacturers rather than have the factories close their doors. And to the credit of both the growers and the factories it may be said that not a single plant in Southern California has suspended operations. But one plant in this whole section will be idle this year; the plant at Corcoran, which has not been in operation for several years past. There are 10 factories in Southern California. Of these 10 four are located almost within sight of each other in Orange County. The factory at Los Alamitos is just over the line in Los Angeles County and is the fifth plant almost within a stone's throw of the others.

Last season there was produced in this section of the state alone nearly 500,000 tons of beets, for which the growers were paid at the average of $5.80 per ton, or $2,900,000. Upwards of 85,000 tons of granulated sugar was produced in this single section lying in the valley of the Santa Ana.

Near the mouth of the river are yet to be found the swampy lands used as preserves for the wild duck and goose. The recovered peat lands now used for celery growing are lands once left to the uses of the wild fowls. These lands, now so valuable, were traded for a mere song a few years ago. Today $500 per acre is asked by the owners of the lands. Thousands of acres of the old grain lands of this section are now devoted to the growing of beets. A few years ago it was learned that these grain lands which had been cropped year after year to wheat, barley and oats, giving returns scarcely more than the outlay, were adapted to the sugar beet. Since that time there are many farmers in the vicinity of the factories of that section who have made money out of this crop. Land has been bought and paid for from the profits of sugar beet growing. Attractive homes have been built and improvements made throughout the beet section. This condition is the best evidence of the value of sugar beet growing to the farmer and the value of the industry to the community.

The weather of the present season has been unusually favorable for a heavy crop of sugar beets in California. Copious rains well distributed throughout the early growing season have assured good stands generally. There seems to be no doubt of a heavy tonnage this year. Although, on account of the action of the factories in reducing the price offered to growers, there was less acreage planted, the favorable weather, it is estimated, will bring the tonnage quite up to that of the past year, which was the largest in the history of the industry in this state. On an acreage of 137,000 California produced 1,290,000 tons beets last year. As the beet fields are now "laid by,' which means that operations have ceased until the harvest begins, estimates of the tonnage are made which are fairly reliable.

The first testings of the beets for sugar quality are now being made at the different plants. On account of the lack of sunshine during the month of May these preliminary tests are less than normal. But the sunshine that is certainly due during the next six weeks should put the sugar in the beets that gives California first place in this respect.

Within this month, when the big, booming whistles of the factories announce the beginning of the sugar campaign, all of the plants of this state, except those at Hamilton City, Corcoran and the Alameda factory will be in operation. The Sacramento Valley Sugar Company, whose [illegible] is located at Hamilton City in [illegible] County, and the Alameda [illegible] cently established in Monterey [illegible] are not to operate this season, giving as the reason the uncertainty of the future sugar market. The Corcoran factory has not been in operation since its first campaign in 1909. It is tied up by litigation. The plants at Salinas, Visalia, Betteravia, Oxnard and Chino, will be in operation as usual. The Oxnard and Chino factories get a part of their beets from Orange County, and both expect a campaign lasting about 100 days. The fields look very promising and estimates show many fields will average 20 tons per acre.

Estimates, as the crops now stand, indicate that the yield per acre will very much exceed last season and the gross tonnage be quite as large. The factories at Anaheim, Santa Ana, Los Alamitos and Huntington Beach are in preparedness for the campaign which is expected to run the usual length, about 100 days.

Los Alamitos, the oldest factory of the group, is located amid great stretches of old grain fields which have proven of so much value to the beet growers of California. The factory was the beginning of things in this locality. Since that time some 15 years ago, a neat little village has grown up about the factory and the country has improved with the progress of the beet sugar industry. These old grain lands which were fast becoming unproductive because of continual cropping to grain and the superficial cultivation of same, have since the introduction of the sugar beet advanced in market price two and three fold. Add to this that where grain is now raised on these lands in rotation with beets the yield is increased quite 100 per cent in some cases.

At Huntington Beach is the newest of Orange County's sugar factories. This factory has a capacity of 800 tons of beets per day of 24 hours. It is a model factory of its kind and is unusual in that it is run entirely by electric power. No other sugar factory on this coast is. Its product is grown in fields where irrigation is unnecessary. The natural rainfall is helped by the heavy mists which sweep in from the seas carrying co-

(Continued on Page 95.)

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Farmers Must Organize

The Danger from the Eight-Hour Law Impels Early and Continued Work. Several Organizations Already Earnestly Informing Voters as to Peril to Farmers

Organize and fight or suffer from the greatest handicap which growers of this state have ever striven under, is practically the situation now before the farmers of California. The danger is far from imaginary, for the sophistries of the visionary are being accepted by those who have given the subject little thought.

The Farmers' Protective League is doing excellent work in the north. Mr. Arthur Dunn, secretary and manager, writes:

Farmers' Protective League.

It appears to us that ridiculous as this measure may appear there is very grave danger of its being adopted. There is only one chance that the farmers of the state have, and that is that by their own complete organization they may be able to educate sufficient numbers of the city voters to offset the organized advocates of this bill.

While the $2.50 a day minimum wage measure has not yet been placed upon the ballot by initiative petition, Secretary of State Frank C. Jordan has been informed by representatives of the socialist party, who drafted the bill, that the proposition will be on file before August 3, the last date upon which it may be received. The qualifying signatures, he has been informed, will come from Los Angeles, San Francisco and Alameda Counties.

HERE IS THE EIGHT HOUR LAW

"An Act to amend the Penal Code by adding a new section thereto, to be numbered 393½, limiting the hours of labor of employes and providing a penalty for violations of the provisions of this Act.

"The People of the State of California do enact as follows:

"Any employer who shall require or permit, or who shall suffer or permit any overseer, superintendent, foreman or other agent of such employer, to require or permit any person in his employ to work more than eight hours in one day or more than 48 hours in one week, except in cases of extraordinary emergency caused by fire, flood or danger to life or property, shall be guilty of a misdemeanor, and upon conviction thereof shall be fined not less than $50 nor more than $500 or imprisoned in the county jail not less than 10 nor more than 90 days, or both so fined and imprisoned."

The proposed statute fixes the compensation of all working persons over 18 years of age at $2.50 a day, and $1.50 a day for all under 18 years of age.

"The Farmers' Protective League of California will fight the minimum wage bill along with its twin, the Universal Eight Hour Law, and its little brother the $5,000,000 state factory, with its free board, free lodging and free clothing provision," declared Arthur Dunn, secretary and manager at Sacramento. "We realize that the proponents of these measures are organized, and an organized minority has the advantage of an indifferent majority. However, farmers are organizing everywhere. This league will have branches in 50 of the 58 counties of the state.

"The gravest danger California faces is the number of propositions to be voted upon. Secretary of State Jordan informs me about 50 measures must be decided by the people, and he is preparing booklets containing 96 pages, or about 120,000 words printed in small type, the text being descriptive and argumentative of the amendments. It will be almost an impossibility for a voter to read this understandingly inside of one month. These booklets will reach electors about the 1st of October. The shortest measure described in the book is the Universal Eight Hour Law, which contains 108 words, eleven commas and one semicolon. This amendment will be third on the ballot, the one authorizing a call for a constitutional convention being No. 1, and the prohibition amendment being No. 2. All of this extra printing and postage will cost the state and county governments approximately $200,000, and there will be a charge of $50,000 for printing the ballots. The ballots will be more than two feet long and nearly three feet wide, or 26x32 inches.

"It must be understood that initiative measures once adopted by the people cannot be amended by the legislature, vetoed by the governor or altered in any manner except by another petition duly initiated and receiving a majority vote at a subsequent election. That is one more reason why the Universal Eight Hour law must be defeated."

In the south the Farmers' and Fruit Growers' Federation is already busy, though only just organized.

Farmers' and Fruit Growers' Federation.

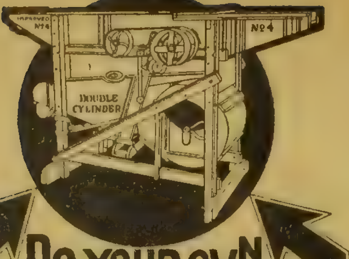
At the first meeting those present unanimously declared that, inasmuch as the law as submitted contains absolutely no exemptions, with no allowance for sun, wind, rain or other uncontrollable conditions of nature affecting the harvesting and marketing of crops, it would prove a disastrous blow to all agricultural interests and to the general prosperity and welfare of the state.

F. Q. Story, president of the California Fruit Growers' Exchange, was unanimously elected president of the new organization; H. B. Chase of Riverside and E. G. Dezell were chosen vice-presidents; F. O. Wallschlaeger was made secretary-treasurer. The executive committee includes also E. S. Moulton and W. G. Fraser of Riverside, C. C. Teague of Santa Paula, E. M. Lyon of Redlands, W. W. Sprott of Porterville, C. C. Chapman of Fullerton and G. Harold Powell of Los Angeles. Pitt P. Hand of Los Angeles was made campaign manager in charge of the work against the proposed harmful legislation.

The federation proposes before the November election to show the public exactly what the sweeping Eight Hour Law would mean to all tillers of the soil, that it would increase the cost of production from 20 to 30 per cent and raise the cost of living to every consumer.

The Eight Hour Law as submitted in Proposition No. 3 on the November ballot is the most inflexible and drastic statute on the subject ever drawn. It was almost unanimously voted down by the last legislature as too sweeping and dangerous. All similar laws restricting hours of labor for males, such as that in New York, contain exceptions to provide for necessities of farming. The "Women's Eight Hour Law" recently adopted for California makes exemptions of household helpers, nurses and others to provide for similar necessities. The socialists' "universal" law now proposed embraces all wage-workers, men and women, even including the women exempt from the existing law. The farmers contend that, beside being ruinous and impracticable, the law submitted is flagrantly discriminatory in that it provides for "a fine of $500 and a jail sentence of 90 days" for any employer permitting "more than eight hours' work in one day or more than forty-eight hours in one week," it imposes no obligation whatever upon the employee.

Secretary Wallschlaeger yesterday



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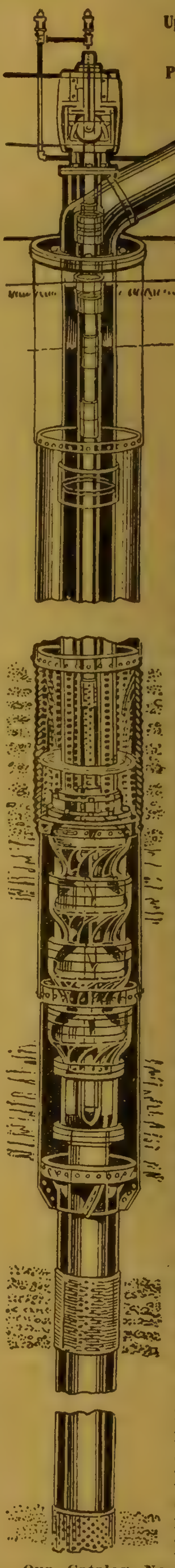

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stated that the law would mean an increase in production cost of 25 per cent to California growers of oranges and lemons, who already are under a handicap in competition with Florida, Porto Rico and Europe, where production cost is less than it is in California even now.

The farmers urge that the prohibitive law would tend to drive California agriculture into the hands of Hindoos, Japanese and Chinese, who would operate leased lands through "partnerships." Also that it would bring here many undesirable citizens in search of the "easy life" and a "labor paradise."

The Farmers' and Fruit Growers' Federation will have headquarters at 740 Consolidated Realty building, Los Angeles, where weekly meetings will be held. Agriculturalists throughout northern and central California have formed organizations to oppose the law, and similar movements are under way in every county of Southern California.

J. W. Mills, Marysville.

It is my opinion that the most serious problem that confronts the farmer is the proposed Eight Hour Law applied to farming operations. It is not a question of seasons and special work at any one particular time that such a law would cripple the farmer. Occasions arise at the most unexpected time when overtime work is necessary to save serious loss. Were we to commence to cite examples there would not be space in one of the big dailies to print them. With few exceptions, the farmer's margin of profit is very narrow, and a loss, though very small, postpones the time of clearing up his debts. It is not generally realized that most of the farming operations are done on credit of some sort and the debt has to be paid.

The winter just past affords a good illustration of how the Eight Hour Law would bankrupt the grain farmer and seriously cripple the fruit grower. The continuous wet weather prevented plowing and seeding till March. The farmer was compelled to sit idly by, feed his idle stock and watch the rain come down all winter, and as soon as the land would permit being worked it was a constant rush from daylight till dark, and then the season was too short to produce normal crops of late grain. It was not possible to work two eight hour shifts of men unless two shifts of horses were available. There is seldom enough to supply the present demand at such seasons. Another illustration. I at one time had a gang of 20 Chinamen making raisins. About 5 o'clock in the evening a thunder shower started to form. Every man was put to work stacking trays. We all put in 13 hours' work that day and ate supper at 9 p. m., but we saved enough raisins to pull the grower through on the season's work. Had we been hampered by the eight hour law we could not have gone to town, a distance of five miles, rustled a crew of 20 men and stacked the raisins before the rain fell.

The most deplorable feature of an eight hour law is that it will result in the abandonment of the management of many farms by their owners and result in the formation of Oriental and Asiatic companies who will handle the farms; the law of personal freedom will protect them, while we are tied down and made liable to a criminal charge for doing just what the Jap and Hindu is protected in unless we take the hired man in as partner.

A. L. Hurtt, San Bernardino.

Keep up the fight against the eight hour law. Some one should make a speech against it in every school house in the state between now and November 3. That is the only way to reach the non-reading farmer.

Earl Logsdon, Goshen.

In all the recent issues of the farm papers I see articles on the proposed eight hour law.

In central California there are men out of work with plenty of work out on the farms away from the cities. These men stay close to the cities, where they have registered so as to vote for this law.

Several have told me that they did not care how the election went just so the eight hour law went through. That class of people do not work except when they cannot beg or get an easy snap. When hired they "kill" all the time the can, so if one has a right to judge from what they say and appearances they will do the same if they only have to work eight hours.

If the law is passed it will either compel the farmers to close down and quit the job or freeze the hobo labor out of the state as soon as possible.

Central and northern California are strong union places and all the unions favor the eight hour law, and the bill will be hard to beat unless some pressure is brought to bear on the minds of the voters before the election.

Geo. D. Kellogg, Newcastle.

In the matter of the proposed eight hour law and its effect upon the farming and horticultural interests of our state should the proposed amendment carry, I am free to say that I think it will be unjust and work a great hardship to the farming and fruit industry. To take a 20 mule outfit with its combined harvester and thresher into the harvest fields and shut it down at the expiration of eight hours' labor would mean a great loss of grain, I fear, to the owner. Likewise the haying operations.

For 36 years I have made a ten-hour day, and a six day week by my employees a success and satisfactory in my orchards, but for the limit to be made eight hours a day, and not more than 48 hours a week, gives a perilous outlook for the fruit industry. As a shipper of fruit in car lots for over 30 years, I cannot see how it could be accomplished and care for the fruit properly. We could not afford to hire a double shift, and there has been no way devised as yet that could possibly handle the shipments of fruit within the eight hours without seriously discommoding the growers.

As a domestic proposition it would be impractical. The employer would be obliged to care for stock, do his chores, waken his hired men at eight o'clock in the morning, call his domestic and tell her to get the dinner on the table at four o'clock p. m and go to bed, and you would do all the rest.

The proposition might work out among the mechanics, factories, banks and some such enterprises, but not so with the farmer and fruit grower. The measure would certainly be inimical to the best interests of these important industries, and would work no benefit to the employed.

C. O. Nichols, Bostonia, San Diego County.

I do not often make an attempt to rush into print, but the subject of the proposed eight hour law seems to me so vital as affecting the interests of both the fruit grower of this section and the laborer employed by him that I can not help but congratulate you in your effort to get at the facts in the case through the columns of your publication.

The few instances cited below, which would seem to work to the disadvantage of all concerned, may have been instanced before and in a more convincing language than the writer has at his command; if so well and good.

Farming is carried on in this section at so close a margin that any factor brought into the operation that tends to decrease the margin to the vanishing point will prove fatal to the industry, and I can think of no one law affecting our branch of it that would come nearer eliminating what profit there may be than the proposed eight hour law where applied to farm labor.

The writer is in charge of a property consisting of about 500 acres planted to the raisin grape, and about 40 acres planted to citrus fruit.

There are so many ways in which this proposed law would prove disastrous, that one hardly knows where to begin, but we may mention two, one for each branch. The raisin grapes when picked are placed on trays which remain on the ground, unprotected, until the action of the sun has turned them into the raisin of commerce. The season of ripening is so late that before the process of curing has been completed the early rains are upon us. The only method possible to save the crop is to place the trays, one upon another, in stacks about breast high and cover them with empty trays.

Now we do not control these rain storms; they come at all hours; often at night and sometimes on Sunday the bell will ring, and we all go out to stack trays; and it is only through the assistance of our very able weather bureau service, together with our own watchfulness that we are able to save the crop.

The suggestion may be offered that we hire a new force to do what stacking is necessary after hours. Impossible. We sometimes have as high as 150 to 200 laborers during part of the raisin season, and other growers in proportion. We have all scoured the immediate neighborhood, retained more laborers than necessary to conduct ordinary operations at this time for the express purpose of having them ready in this emergency, and no more laborers are available at short notice.

We pack and ship most of our citrus crop. Suppose we have sold a car of oranges at a certain price to be loaded and shipped on a given date. This class of produce is shipped in refrigerator cars. One can not order a car of this class today and get it tomorrow; and as oranges are perishable fruit they can not be picked and packed much ahead of shipment; hence it is more often the rule than the exception that things must be rushed at the last moment, working overtime that the car may be delivered as per contract, to prevent its rejection; in which case it becomes a tramp car, to be sold as such for what one can get.

Packing of citrus fruit is all done by experienced men and women. In this section there are few packers, and in no case could one secure other than those already engaged to finish the car. Under existing conditions in this section, with so little margin for the fruit grower, I do not see what the laborer can expect, other than to see his per diem shrink with his hours of labor if the proposed law goes into effect. Conditions, not lack of sympathy on the part of the employer, will force this reduction, and under the law he will work a less number of hours for less pay, for while it is a fact that it is quite possible for a man to accomplish no more work in 12 hours than he should in eight, it is a physical impossibility for an honest man to do as much work in eight hours, or ten hours, as he could in twelve.

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A Journal of Horticulture and Agriculture

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We guarantee our subscribers against loss through dishonesty of any advertiser in the Cultivator. We do not attempt, however, to adjust trifling differences between subscribers and honest, responsible advertisers, nor will we pay the debts of honest bankrupts. Notice of complaint must be sent us within 30 days from date of the transaction, and the subscriber must have mentioned the Cultivator when writing the advertiser.

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SAVE THE ROADS

We mentioned some time ago the arrest and fining of a traction engine driver for injuring the road surface of one of the newly completed state highways by driving over it with a heavy tractor. The engineer was requested to drive alongside of the highway, but refused, claiming he was entitled to the use of the road. The cleats or lugs on the immense drive wheels, of course, did serious injury to the surface. This driver's arrest and fining should have a beneficial effect. Anyone who is so regardless of the rights of the public as to maliciously injure the roadways which have cost large sums of money to build, should be dealt with severely. The good roads are proving their worth and are being demanded more and more, and their mutilation will not be tolerated.

WAKE UP

Read some of the plain statements on page 82 of this issue, then get busy and organize. That "invitation" isn't addressed to just anyone, but direct to you, Mr. or Mrs. Reader. Your future prosperity and that of this state of California depends in a far greater measure than you imagine on the result at the polls on Nov. 3. You can influence that result by one vote, two votes, three votes or a hundred votes, providing you **get busy and wake up.**

The alarm clock has already "gone off." Why don't you roll out and urge all to vote against the universal eight-hour bill?

RECLAMATION LANDS.

We have from the reclamation service statements of various projects on which there are still farming lands open to entry. Noting that none were available in California or Arizona we wrote the service and have word that all lands in reclamation districts of these states have been taken. This is proof of the worth of the lands and of the water rights. In Idaho, Montana, North Dakota, Nebraska, Wyoming, South Dakota, there are many such farms open to entry at $30 to $55 per acre, including water right, and of course on the usual ten-year payment plan. The greatest number in any state is in Wyoming. In one district, the Shoshone, there are 200 farms ranging from 40 to 80 acres each and at prices from $50 to $52 per acre. From this the various districts range down to the Yellowstone project in which there are now 18 farms left at $45 per acre.

CROP CONDITIONS

This state will this year produce practically 8,000,000 bushels of wheat, or to be more exact, according to the figures issued by the bureau of crop estimates, 7,950,000. The average production for the past five years has been 7,047,000. In oats the forecast is that this year's production will be something over 8,500,000 The five-year average has been 6,624,000. For barley the forecast is 45,800,000 bushels, while the five-year average has been 3,769,000. If this forecast is correct this will be fifteen times as many bushels this year as for the past five years. It surely is a wonderful year, and California is in position to take advantage of it.

ORANGE PRICES.

The orange grower is disappointed by the turn the orange market has taken. A few weeks ago there was a decided upward trend, and the immense crop gave promise of bringing immense returns. There has been no period of the year in which large prices have been received, but there has likewise been no disastrous slump, and averages to growers for first class fruit have been very fair. But the promise of much larger prices was broken by a weakening market, caused by intensely hot weather over the East, receipts of small fruits in all markets, combined with abnormally large shipments from all citrus sections. Shipments are now slowing up; navels are practically all in and the 8,000 cars of Valencias remaining are commanding fair prices. The grower and shipper must be more careful, for he has been sending well up toward 2,000 cars per week, which is more than the market will absorb.

STORE THE FLOODS

While congress does politics, great questions remain unanswered and great resources are frittered away. While the Newlands bill is waiting for sufficient support to secure its enactment, the Colorado rises and does untold damage; another few months and the Mississippi will destroy lives and millions of property because no effort is made to hold back the floods which should be stored to be a benefit when needed.

Following the plans which have proved futile in the Mississippi Valley, owners of rich lands along the Colorado are engaged in raising levees higher and higher. How much more reasonable it would be to throw the fullest support to a measure like the Newlands bill, which, instead of attempting to dam the mouth of the river, proposes to work at the source, and which, we believe, offers a solution of this great problem. Imperial Valley has sent a lobby to congress and will work for a liberal appropriation for work directly at the seat of the present trouble. This is perhaps wise, but may there not be greater wisdom in also working for the Newlands bill? The best part of this measure, which should command for it the support of the entire country, is that the benefits resulting from its passage will not be local, but will apply to almost every section of the United States.

DOES FARMING PAY?

The University of Arizona, or rather its experiment station, is sending to farmers a blank report which it is requested be filled out and mailed to the station. It will collect a fund of information as to business methods, especially as to bookkeeping which farmers do or don't do. Such points as distance from the station, area of ranch, rented or owned, number of acres improved, number of acres in pasture and other points of a general nature, are first asked. Then as to values; number of live stock, with value, number sold, number died, number on hand at the end of the year; amount of butter produced on the ranch, cream sold at wholesale, milk at wholesale or retail, at condensary or cheese factory, buttermilk and amount received every day; in fact, a full list of all the productions of the ranch. It is requested that the cash expenditures for the year be given. Under this head comes the amount paid out for labor, exclusive of household help, amount paid out for machinery fittings, repairs, fences and repair of fences, hay, silage, straw, water, etc., down to the smallest detail.

Just what use the station will make of these figures it does not inform us, but we can see one great benefit, and that is that it will awaken in many farmers a realization of the fact that there may possibly be some advantage to him personally in keeping tab on receipts and expenditures. Farm bookkeeping is becoming rather more popular than it was at one time, yet we doubt not there are many farmers who have hardly a diary to help them keep track of their business transactions. The business of farming is becoming more and more strenuous, and the farmer who does not watch and keep a record of transactions which prove unprofitable and those which are profit bringers stands a chance of not making good. We hope Arizona will summarize and give us some lessons from the returns from this request.

Agricultural News Notes

The International Irrigation Congress will this year meet in Calgary, Alberta, Canada, October 5-9.

The color line is being drawn in the army in the purchase of horses in favor of sorrels, browns, bays and blacks. The light colored mounts are fine targets for sharpshooters.

From Nice, France, comes the report that the present outlook for the olive crop for the spring of 1915 is, so far, encouraging. The trees have blossomed abundantly, and the young fruit is commencing to develop satisfactorily.

Congress recently passed an act granting $500,000 to the department of agriculture to combat hog cholera. Experiments will be carried on in 15 different states and farmers will be organized to cooperate with state and federal authorities.

Wheat and wheat-flour consumption annually per inhabitant is estimated at 202.7 pounds in Germany, 580 pounds in France, and 650.7 pounds in the United States. German consumption of rye flour is about as much as that of wheat flour.

Apricot kernels exported from China during 1912 amounted to nearly 6,000,000 pounds. The sweet kernels bring about $20 gold per 100 pounds; the bitter, about $5. The cracking of the seeds and extractng of the kernels is all done by hand with a wooden hammer, the seeds being first soaked in water to moisten them..

The American Presbyterian mission at Allahabad, India, is acquiring 53 acres near Allahabad to establish a fully equipped agricultural department for experimental work in connection with the Ewing Christian College at Allahabad. It will be in charge of Samuel Higginbottom, an American missionary who has become noted for the important improvements in agricultural methods he has introduced among native farmers near Allahabad, teaching them the use of American plows, etc.

The department of agriculture has issued revised regulations governing the interstate movement of live stock, embracing changes designed to facilitate the movement of stock from quarantined areas. Cattle that have been dipped once under state or federal supervision may be shipped from an area quarantined for ticks to a market center where there are proper dipping facilities and the department of agriculture maintains an inspector. After a second dipping the cattle may be sold for any purpose.

Agricultural cooperation has proved successful in Scotland, especially in the past ten years. There are now upward of 124 agricultural trading societies, principally in the Highlands and islands of north Scotland. The total trade of these associations in 1913 was about $1,888,000. The collective purchase of implements, fertilizers, and other supplies and sale of products of agriculture are effected through federations of local societies. Producers of milk have been able to obtain an improved price by a system of milk depots which largely prevents losses through periodical oversupply and fluctuating demand. Considerable increases in the prices of eggs have been obtained by better grading and collective marketing. In the purchase of superphosphates collective buying by many societies resulted last year in reducing the price by $2.43 per ton.

Agricultural News Notes of the Pacific Coast

Northern California

Fruit packing houses at Placerville are cooperatng in sending out carload shipments.

The Woodland unit of the Yolo County Farm Bureau has organized to fight hog cholera.

The university farm at Davis has just received 107 head of beef cattle to use in feeding experiments with silage.

Several carload shipments of beef cattle have been sent out from Ducor in Tulare County in the last few weeks.

Four eight-months-old Duroc pigs have been sent to Hawaii from the university farm at Davs. The bunch of our brought $200.

Shipment of Bartlett pears from the Placerville district in Eldorado County began July 15th. The crop this year is unusually large.

August 5th has been set apart as Grange Day at the Gravenstein Apple Show at Sebastopol. The apple show will be held from the 3rd to the 9th.

Horticultural Commissioner Bremner of Sonoma County is making up lists of growers in his county preliminary to mantaining a growers' service bureau.

Fruit growers of Atwater, Merced County, who were offered four and one-fourth cents for their dried peaches, joined the cured fruit association and secured five cents.

Yolo County has formed a branch of the California Farmers' Protective Association with a membership of more than 300. W. S. Evans is president and H. S. Maddox, secretary.

At the last regular meeting of the Sacramento Valley Fanciers' Association it was decided to hold a show at Sacramento November 2-7, in conjunction with the Sacramento Poultry Association.

Up to July 1st over 400 cars of deciduous fruits left Winters, Yolo County, most of them for eastern markets. It is thought the total for the season will reach 700 cars, including grape shpments.

Farm Adviser Lyons of San Joaquin County is expermenting in several vineyards with thinning Tokay clusters. He hopes to produce more evenly colored, better formed fruit with no decrease in tonnage.

Horticultural Commissoner Rutherford of Stanislaus County estimates there will be in that county a 100 per cent crop of almonds, apricots, figs, grapes, cherries, berries, lemons, olives, oranges and walnuts.

County Horticultural Commissioner Howard Kerchival of Sacramento County recently gave spraying demonstrations against red spider affecting almonds and prunes. It is found that atomic sulphur has given best results againt the pest.

Assistant Farm Adviser Searles of Yolo County has posted the following schedule for meetings of the county farm bureau during August: First Tuesday, Esparto; first Thursday, Guinda; second Monday, Winters; second Friday, Davis; third Monday, Clarksburg; third Wednesday, Knights Landing; fourth Monday, Dunnigan; fourth Wednesday, Yolo, and fourth Thursday, Woodland. These dates if satisfactory will be followed during the rest of the year.

Central California

Turlock melon growers are receiving $15 a ton.

Visalia is planning to hold a citrus fair some time in December.

Sugar beet harvesting is progressing near Alpaugh in Tulare County.

San Joaquin County has bought an automobile for the use of its county farm adviser.

Practically all large firms of grape shippers have joined in the standardization agreement.

On account of low prices offered for green fruit many peach growers have decided to dry their crops.

An experimental planting of rice on 12 acres near Allensworth, in Tulare County, has proved very successful.

The first grapes shipped from the Vacaville section of Solano County was a quarter of a carload of Baby Toes.

Work is progressing rapidly on repair of the Davis reservoir near Turlock. The water is now all out of the reservoir.

The percentage of sugar is reported running very high in the Alpaugh beet fields. The beets are now going to the factories.

Tulare County's ability to produce alfalfa is shown on the ranch of John L. Adams, where the fifth crop has already been harvested.

President Burton of the Tulare Fruit Growers' Association states that applications for membership in the association are coming in rapidly.

Fruit growers of the Pajaro Valley met at Watsonville on Tuesday of last week to devise means of preventing importation of fruit pests from other states.

With the possible exception of the prune crop all green fruits in the Sacramento Valley are estimated as close to normal by the state commission of horticulture.

The San Joaquin Valley Date Association has filed articles of incorporation. Directors are: W. R. Nutting, George S. Waterman, D. L. Newman, M. K. Harris, Hans Karrer, S L. Strother and Henry Hawson.

San Jose poultrymen at a recent meeting listened to a talk by W. P. Humphries, organizer of the Sonoma County Poultry Producers' Association, on the subject of a state-wide association modeled on the lines of that in Sonoma County.

Apiarists are being notified of the provisions of the net weight container law which requires that contents of cans shall be plainly marked before honey is sold and that the five-gallon square can shall be packed to contain 60 pounds net weight of honey.

Stock ranchers of San Benito County have issued an appeal and warning to hunters to be careful of camp fires, not to shoot among stock, not to hunt on property where they are not invited to hunt, and to be generally careful of other people's property.

More than 25 per cent of the watermelon crop of the Turlock Irrigation District, according to a report of County Horticultural Commissioner Rutherford, has been destroyed by wilt. On account of the fungous nature of the trouble it is feared no remedy can be found for it.

Southern California

Los Angeles County claims 33,363 automobiles.

Riverside has decided to construct Mission style buildings for its county fair.

The California Vegetable Union shipped last year from the southern part of the state 46,000 carloads of vegetables, including melons.

Estimates of the sugar beet crop for this season now indicate that while the acreage is smaller than in 1913, the total output will be larger.

Southern California's bean crop this year will be valued at more than $3,500,000, according to estimates made by railroad freight statisticians and large bean holders.

The grape shipping season is on in full swing at Calexico in the Imperial Valley. An average of two cars per day for 15 to 20 days will be shipped from that district to coast and eastern markets.

L. O. Howard, chief of the bureau of entomology, department of agriculture, is at present in Southern California. He is investigating the outbreak of cutworms which are attackng sugar beets.

The production of honey in Orange County this season will be very light. Lack of sunny weather is responsible for some of the decrease, but it is a fact that many of the bee men have given up their stands.

Approximately $70,000,000 worth of oranges and grapefruit will be consumed by the American people the present season, according to figures furnished by Manager Powell of the California Fruit Growers' Exchange.

The organization of a general protective league for the walnut industry, to include independent shippers as well as members of the Southern California Walnut Growers' Association, has been proposed by Mr. Thorpe, manager of the association.

The Lemon Men's Club of California met at Corona, Saturday, July 11th. Among the speakers were Prof. Quayle, whose subject was "Enforcement of Scale Eradication," and G. Harold Powell of the exchange, who spoke on "The Future of the Lemon Industry."

Walnut growers of Garden Grove, Los Angeles County, have organized an association. Charles Swall has been elected president; W. E. Schnitger, vice-president, and Ed. Lee, secretary and manager. The association will handle about 300 tons of walnuts this year.

With the final settlement of the claims of orange growers of Colton, Riverside County, against the Riverside Portland Cement Company, that concern will begin at once to double its plant at a cost of $1,000,000. Settlement was effected by the company purchasing the groves outright at prices fixed by a board of appraisers.

Orange growers and packers of Orange County assembled at the packing house of the Anaheim Fruit Association last Saturday to discuss the disposal of cull fruit. The idea is to keep the cull fruit from competing in the home market wth the first-class article and also to devise some means of turning the cast-off oranges into a profitable by-product.

The Coast

Many Chinese eggs received in Portland have been put in cold storage.

The Salt River Valley of Arizona reports its best cantaloupe crop this year.

Summer rains have set in in Northern Arizona and the Roosevelt Reservoir is filling.

Carload exhibits of range stock are to be a feature of New Mexico's coming state fair.

Yavapai County, Arizona, shipped out 400 carloads of cattle during the first half of June.

Farmers of Monmouth, Oregon, are reported paying 25 cents a head for gophers caught in ther fields.

A boys' cotton club has been organized in Chandler, Arizona. This is claimed to be the first in the United States.

More than 46,000 acres of grazing lands in Eastern Washington will be leased this month by the state to sheep men.

North Yakima; Washington, has shipped 30 cars of cherries and this is estimated as about half the crop for the entire valley.

The Yakima Valley of Washington will produce this year 28,000 bales of hops, according to estimates of prominent hop growers.

From Douglas, Arizona, comes the report that the range is in good condition. About 12,000 cattie have been shipped from that section this season.

The Utah Fruit Growers' Association this year shipped 30 carloads of cherries, as compared with two carloads last year. The fruit averaged $1000 a car.

The Oregon Cattle and Horse Raisers' Association offers a standing reward of $1,000 for the conviction of any person stealing cattle of an association member.

President Clark of the Wenatchee Valley Fruit Growers' Association says that growers will never get rid of fire blight until every insect in the Northwest is eradicated.

Secretary Ramage of the Washington Beekeepers' Association says this has been a very unfavorable honey season on account of the cold weather preventing secretion of nectar. Many apiarists are feeding their swarms.

The great Chandler ranch, on which is now situated the town of Chandler, Arizona, has shrunk in acreage until on the first day of this month the ranch headquarters were formally closed. One of the greatest ranches in Arizona has passed.

Yakima County, Washington, has been divided into two sections for the purpose of a campaign against fire blight. Each section will be in charge of a deputy inspector, who will have five or six sub-deputies to aid him. The growers will be organized into protective associations.

At a recent meeting of the Cattle and Horse Raisers Association of Oregon preliminary steps were taken for the formation of the Northwestern Cattle and Horse Growers' Association. All the small associations in Oregon, Idaho and other states of the Northwest will be asked to join the larger organization.

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IF YOU HAVE NO SILO, A LITTLE investigation will be sure to convince you that you ought to purchase one right away.

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Live Stock and Dairy

CHEESE FROM SHEEP'S MILK

Written for California Cultivator by Leroy Anderson

On the ranch of Henry Glide, five miles north of Dixon, 700 sheep are being milked twice daily for cheese making. Mr. Glide rents has sheep to a Swiss who does all the work while Mr. Glide furnishes the feed (pasture). Four men are required for milking and the job is completed in about three hours. The milker sits on a low stool at the opening of the corral from which the sheep are driven. A low wooden tub about seven inches deep by 15 inches in diameter is used to milk into. This is set slightly into the floor so that the milk may be conveniently drawn into it. The sheep average about one pint of milk at each milking, which for the lot makes 700 quarts a day or about 1500 pounds. They are chiefly the Merino type and not bred for milk production like some sheep in Europe.

Sheep's, or ewes' milk is much richer in fat and casein than cow's milk and thus will make more cheese to the hundred pounds. German analyses give a good comparison of the relative quality.

Comparison of Ewe's and Cow's Milk —Per Cent Composition

Authority	Water	Casein and Albumin	Fat	Sugar	Ash
Sartori—Average of analyses of milk from 2,700 ewes	78.70	6.30	8.94	5.06	1.02
Konig—average of analyses of milk from 705 cows	87.27	3.39	3.68	4.94	0.72

According to these analyses ewe's milk has 21.3 per cent solid or dry substance as against 12.73 per cent for cow's milk, or an increase of 67 per cent. On this basis 100 pounds of ewe's milk should make about 50 per cent more cheese than an equal amount of cow's milk. This fact helps to make it profitable to milk ewes in California when large numbers are available. The milking season this year will be not over five months, beginning March first. In 1913 the season began February first and lasted six months, but this year, owing to heavy rains, the lambs could not be weaned so early. Lambs are left with the ewes until about three months old when they are weaned and milking the dams begins.

The milk is made into cheese as soon as possible after each milking. It is placed in a vat and rennet stirred in thoroughly. In 30 to 35 minutes the milk is coagulated, when it is taken out in cloths and drained. When sufficiently drained, so that it will keep its shape, the curd is molded into circular forms, each weighing about six pounds, and rubbed thoroughly with dry salt. The curd lies on a draining table 12 hours and then is packed in brine in large wooden (oak) hogsheads—holding possibly 100 gallons. After soaking there for four or five days the cheese is taken out and washed in fresh water to remove all salt from the surface. Then it is packed in small oak barrels, about one half barrel, or 20 gallons, in size. They are now ready for shipment and go to market in the barrels which are headed up securely. The chief market is San Francisco, where the cheese brings from 23 to 25 cents per pound.

SUPERVISION OVER IMPORTATIONS

In case you are a breeder of live stock and desire to import a number of animals for breeding purposes or possibly a pure-bred bull, boar or ram for the improvement of your herd or flock, it will be well to know that the federal government maintains a strict supervision over the entry of such animals into this country. The same close scrutiny is exercised over deer, goats or other pet animals, which foreign travelers sometimes wish to bring home as pets or as mementos of their travels.

In either case it will be advisable to defer making a purchase or engaging space for the animals on a steamship until you have ascertained just what requirements govern importations of such animals.

By act of congress, the secretary of agriculture is given authority to make such regulations and take such measures as he may deem proper to prevent the introduction or dissemination of any contagious, infectious or communicable disease of animals from a foreign country into the United States.

Under such authority, regulations of the department of agriculture require that any person contemplating the importation of cattle, sheep and other ruminants and swine from any part of the world except North America, must first obtain from the secretary of agriculture two permits. One of these permits upon presentation to the American consul at the port of shipment will entitle the specified animals to a clearance; the other will assure, subject to inspection, their reception and entry subject to observation in quarantine at the port of entry on the date prescribed for their arrival or at any time during three weeks immediately following. This leeway allows for any unavoidable delay, through bad weather or other cause, in the steamer's schedule.

Three animal quarantine stations are provided on the Atlantic seaboard near the ports of Boston, New York and Baltimore for the detention of imported stock. The animals included in this regulation are cattle, sheep, goats and other ruminants, swine and collie, shepherd or sheep dogs. All animals from parts of the world other than North America are subject to this quarantine regulation. If no disease develops while the animals are detained at the quarantine station the owner is permitted to ship them to their ultimate destination in this country.

All animals of the classes named and which are subject to both inspection and quarantine must be entered through these ports.

Cattle from Great Britain, Ireland and the Channel islands are held in quarantine for a period of 30 days. If from other countries, except those of North America, the quarantine period is 90 days, counting from date of shipment. Sheep and swine from any part of the world except North America, are subject to a quarantine of 15 days.

The department of agriculture receives periodically official reports from various foreign countries concerning conditions as regards existence of certain communicable diseases of live stock. These enable the secretary of agriculture to determine countries from which certain animals cannot be imported without danger to the live stock of the United States. No permits are granted for importations from such countries. For instance, owing to prevalence of foot-and-mouth disease and other communicable diseases in countries of the old world and South America, importations of cattle, sheep, other ruminants and swine have for several years been forbidden from countries other than Great Britain and North America. This work is aimed to exclude communicable diseases, a number of which are unknown in this country, any of which, if introduced, would result in great loss to our live stock industry.

Persons interested may obtain the

latest regulations (B. A. I. Order 209, effective July 1, 1914), on application to the chief of the bureau of animal industry, department of agriculture, Washington, D. C.

CAMPAIGN AGAINST HOG CHOLERA

Under the recently passed act of congress which grants $500,000 to combat hog cholera, the U. S. department of agriculture's agents will cooperate closely with the state authorities to prevent and eradicate the disease by the use of antihog-cholera serum and quarantine methods. Approximately $20,000 will be spent during the coming year in each experimental area selected. Thirteen of the counties, where the work is to be carried on, have been picked out, and in 12 of these the work has already been started. Two other counties are to be selected within a short time.

The thirteenth county, where the work will soon be inaugurated, is Decatur county, in Georgia.

Appropriations will be spent in making surveys, using serum on hogs on infected and exposed farms, in sanitation and quarantine work and i organizing farmers to cooperate with the state and federal authorities. In addition, funds will be used for the production by the department of antihog-cholera serum and for the inspection and proper control of serum prepared by private and other agencies.

Extensive demonstration and educational work also will be undertaken in territory outside of experimental areas to acquaint farmers with the results of the experiments and to supply them with information as to the methods of controlling the disease.

HAVE A DIPPING VAT

Every farm on which hogs are kept should have a dipping vat, and hogs should be dipped regularly. No one can afford to feed lice and ticks good grain and grass, yet tons of feed are consumed in that way. But we know that there is not a dipping vat on every hog farm, nor is there likely to be for years. Se we have a suggestion to make. Use crude oil liberally in all of the water holes and wallows to which the hogs have access. They will come out of these holes literally covered with oil and keep fairly free from lice. Another good scheme is to wrap old sacks and rags on the posts where hogs rub, and keep these saturated with crude oil.

Probably the nearest approach to successful one-crop farming is in California, but a study of the history of "world agriculture" from the earliest times to the period of which we have an intimate firsthand knowledge prompts the suggestion to any one engaged in the production of a single crop that an arrangement by which greater diversity could be obtained will certainly be better for the one who may be handling the land ten years from today, whoever that might be. It seems like a waste of opportunity to grow alfalfa for hogs and cattle on land that will grow fruit, and no one would advise taking out an orchard to make diversity, and there are some small acreages that produce so great a revenue that fertility, physical condition of the soil and all of the things that go to make permanent and enduring agriculture can be obtained regardless of cost. But there are others who are planning farms on lower-priced lands who can well consider a combination of fruit, alfalfa and live stock. This will make a better distribution of labor for all of the year, as well as manure for the orchard from the live stock and a diversity of crops that will make more continuous revenue and a foundation for a farm business that will be successful for generations.

UNSELFISHNESS

When little Margaret passed her plate the third time for chicken her mother said:

"My dear, you must not eat so much chicken. I am afraid you'll be ill."

"Well, mother," said Margaret, "I'm not eating this because I want it; I'm collecting the bones for Fido."—Harper's Monthly.

WORLD'S RECORD COWS

The following table from the Missouri Ruralist shows a list of the best cows, according to latest official records published, and their production of butter-fat for 365 consecutive days each:

Name	Breed	Pounds butter-fat
May Rilma		
Banostine Belle De Kol	Guernsey	1,059.59
Pontiac Clothilde De Kol 2d	Holstein	1,058.34
Sophie 19th of Hood Farm	Holstein	1,017.28
High-Lawn Hartog DeKol	Jersey	999.27
Colantha 4th's Johanna	Holstein	998.34
Spermfield Owl's Eva	Holstein	998.26
Eminent's Bess	Jersey	993.25
Spotswood Daisy Pearl	Jersey	962.82
Jacoba Irene	Guernsey	957.38
Olympia's Fern	Jersey	952.96
Miranda of Mapleton	Jersey	937.83
Creamelle Vale	Guernsey	927.16
Auchenbrain Brown Kate 4th	Ayrshire	917.60
Aralia DeKol	Holstein	913.86

In addition to the foregoing, one of the Jerseys, Sophie 19th, has a second record of 931.97 pounds butter-fat produced in one year. Although far down the list in butter-fat, the Holstein, Creamelle Vale, holds the world's record for milk, nearly 1½ tons produced in 365 days.

FEEDING OF SHEEP

The Management and Feeding of Sheep, by Thomas Shaw, late professor of animal husbandry at the University of Minnesota and author of several books on sheep breeding, cattle feeding and dry farming subjects, published by Orange Judd Company, New York, at $2 net. The Cultivator will be glad to secure the book for its subscribers at the above price or, including a year's subscription to the Cultivator, at $2.75 postpaid.

This is a magnificent book for the wool or mutton grower. There are some 470 pages, well written, well illustrated, with complete table of contents covering 27 pages, also an index. The book is dedicated to all students of agricultural colleges and to all persons interested in growing sheep. There are 21 chapters, a few of which we may mention to give an idea of the contents. They are: Sheep as Improvers of Soil Fertility, As Scavengers, For Wool, For Mutton, Wool Described and Classified, Lambs From Birth Until Weaned, Feeding and Care of Breeders, Fattening While Grazing, Milk Lambs, Obtaining and Marketing, Fitting for Exhibition, Washing and Shearing, Marketing, Protecting, Ailments, Dipping, Establishing a Flock and Improving It.

The author says in his preface:

"In writing this treatise, the author has aimed to give in orderly sequence and in simple language the subjects discussed and everything pertaining to the discussion of the various phases of these. The effort has also been made to discuss both feeding and management with such fullness and comprehensiveness as would not be inconsistent with conciseness of statement. The breeds of sheep, the general subject of breeding and the general principles that relate to feeding are not dwelt upon, as these have been discussd at some length in works previously written by the author."

Prices of all kinds of live stock continue to advance in the Sacramento Valley. The abundance of feed and the shortage of cattle, sheep and hogs because of the past two dry years are partly responsible for this. Another reason is that many farmers on 10, 20 and 40 acre farms are getting feed—lots of it per acre under irrigation—and as fast as the feed develops there is a demand for something to feed it to. Dairy cows are in great demand—and in the Princeton, Butte City and Willows country in Glenn and Colusa Counties, $100 is getting to be a common price for fairly good dairy cows, with some selling as high as $125. This is not for the big producers that have been selling for these figures for some time, but for just ordinary cows.

MODERN METHODS

Old-fashioned Mother—What is this Montessori system of child education that I hear so much about?

Old-fashioned Father—I dunno exactly, but the keynote of it seems to be "votes for children."

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Irrigation and Forestry

IRRIGATION OF GRAIN CROPS

Written for the California Cultivator
By N. C. Grider.

That it pays to irrigate crops of hay and grain when the spring rainfall is below normal was proved beyond a doubt by one of the sugar companies operating in Yolo County during the spring of 1913. Six hundred acres were sown to red oats and barley, and owing to the insufficient rainfall the crop promised to be a total failure. The company resorted to irrigation and the returns from the experiment were better than hoped for.

One field of 300 acres, of which 240 were in red oats and 60 acres in barley, was served by a ditch giving us a head of 16 second feet. A plot of four acres was not irrigated. The time required to complete the irrigation was 428 hours, making an application of 1.9 acre feet. The water was crowded over the land as rapidly as possible, but there being very little slope the flow was retarded by the crop. There was a very thick stand (100 pounds per acre was sown). Irrigation was begun on the 23rd of April, and, as there was hardly more than a sprinkle of rain after that date, the crop was completely carried through by the irrigation. The main ditches were already in the field and the laterals were constructed by means of a road grader at a cost of $36. The water company's charge of two dollars per hour amounted to $856.00. The cost of labor and supplies was $219.75, making a total of $1111.75 or $3.76 per acre. Two hundred thirty-six acres of red oats produced 629 tons of hay and 60 acres in barley produced 120 tons, making a total of 749 tons from 296 acres. The four acre piece that was not irrigated produced two tons of oat hay, an average of .5 tons per acre. The hay produced was of excellent quality and after being baled sold readily at a price ranging from $13 to $17 per ton.

Using a net valuation of $10 per ton for the barley hay and $12 per ton for the oat hay, the following table shows the profits due to irrigation:

Crop—Oat hay, per acre irrigated, $2.67; per acre unirrigated, 50 cents; increase per acre, $2.17; value of increase, $26.04; cost of irrigation, $3.76; profit due to irrigation, $22.28.

Crop—Barley hay, per acre irrigated, $2.00; per acre unirrigated, 50 cents; increase per acre, $1.50; value of increase, $15.00; cost of irrigation, $3.76; profit due to irrigation, $11.24.

The records of the other fields gave corresponding results. The writer does not maintain that irrigation would show such profits for seasons of normal rainfall, and the question of irrigation of grain crops is one to be decided after a study of conditions, such as cost of applying the water, probable increase of crop and market value of such increase.

WOULDN'T IT?

Holding a glass of clear honey in his right hand, father observed impressively: It costs the little bees many a weary trip to fill this with sweetness from the flowers." Little Laura, who had been listening closely exclaimed with great earnestness: "Wouldn't it have been too bad if one of them had dropped the glass."—Judge.

IRRIGATION CONGRESS

The twenty-first session of the International Irrigation Congress will be held at Calgary, Alberta, Canada, October 5 to 9, inclusive, 1914. This session will be the first one to be held without the borders of the United States since the congress was organized at Salt Lake City in 1891.

To the people of Canada this meeting offers an opportunity to repay the hospitality which has been extended them at previous congresses; to make known their natural resources and undeveloped riches; and to learn the wisdom which other countries have acquired from irrigation.

The people of the United States are offered an instructive trip to an interesting neighbor country; an opportunity to see that land of which they read so much; a chance to learn of the progress this country has made on lines which still perplex many of the states; to compare advantages of the two countries; and above all, to learn if they cannot do in their own country, to keep their people home, those things which their neighbors to the north have been doing so successfully to attract them.

To the people of the world this twenty-first meeting of a great organization offers a clearing house for the information, experience, practices and results of irrigation, as developed throughout the vast range of arid and semiarid lands which have been brought under subjugation by man.

SUDAN GRASS

Sudan grass was imported into Texas in 1909 and tried out at Chillicothe, and then at the Lubbock experiment farm. So successful has it been that seven farmers planted a total of 25 acres in 1913 with remarkable results.

It has been found to yield from three to five tons of hay and from 400 to 600 pounds of seed per acre. The hay is valuable because it is a great drouth resister, it makes excellent feed, stock eat it readily and it is not a pest as it must be planted each year. As the seed is somewhat similar to Johnson grass it is well that in buying the purchaser should go to those who will give him pure seed.

Sudan grass is usually planted in three foot rows, sowing about one and one-half pounds per acre. When wanted especially for hay the grass should be cut just as soon as it is fully headed. The first crop makes the best seed. Seed should not be planted until all danger of frost is over and when the ground has fully warmed up. Plant it by itself, as it readily crosses with all sorghums, Johnson grass, etc.

The county farm adviser movement has taken another step forward in Missouri. A homemakers' club has been started in one county, and it is announced that funds will be raised to employ a lady county agent to work with farm women in solving some of the difficult problems of home economics. Other counties in that state are discussing the same question. One worker for the movement says: "We want and will have a woman who will be to every home, but especially to the farm home, to the school, the girl and the home maker, what the county agricultural agent is to the farm, the boy and the farmer. We are not decided what to call her or just what her manifold duties will be, but we want a specialist who will come into our homes and schools and do everything that is possible to be done to better conditions of living on the farm and bring efficency into every phase of home keeping." The determination and sanity which marks the attitude of these ladies will almost surely bring success and may mark the beginning of a country-wde movement.

Profit in the Poultry Yard

TEN TURKEYS FROM TEN EGGS

Written for the California Cultivator
By Jean A. Koethen.

To raise 10 turkeys, even in what is considered a bad season, is not much of a feat; neither is it in the least unusual to hatch 10 strong poults from a clutch of 10 eggs, though I have never been so fortunate before, but to put 10 eggs under a hen, to have 10 poults hatch so nearly together that no one could say which was last, and to have every poult alive and husky at the end of a month is an achievement of which I think I have a right to be proud. Hitherto I have been groping, in common with hundreds of other people, for the magic key to turkey raising; now I feel as that old Greek philosopher must have felt when he jumped out of his bathtub and ran through the streets shouting "Eureka! I have found it."

To be sure, my turkeys are not raised yet, and with turkeys there is many a slip before they cross the line of safety at three months of age. but only lice or corn or gross overfeeding will kill them now, and after the self-restraint I have practiced the last month in the matter of feeding I am not likely to overfeed now. As for lice, I dust them every week with buhach powder — rub it into their feathers and under their wings till they are yellow all over—and dust the hen every time I dust them, or oftener.

There's nothing harder for a woman who is accustomed to feeding chickens and children than to steel her heart against the hungry "peep, peep," of baby turkeys. They are so ingratiating, too, running to meet her every time she appears, following her as long as she is in sight, and jumping on her lap if they have a chance. It takes a lot of self-control to feed the tiny, tiny meal they can digest and let them go on crying.

There is a trick, you know, in every trade, and the raising of each kind of fowl has its "open sesame." With chicks it is warmth and exercise; with ducks, soft food and enough of it; with turkeys, cottage cheese and very little of it. I have thought—and said—that poults could be raised without cottage cheese, but since I tried raising a brood of eight without it and buried six of them before they were two weeks old, I am not so sure. Unquestionably, I overfed that unfortunate brood; people do raise them successfully without cottage cheese, but I suspect it is only on very good range, where the poults may be left to nature.

"It's the nature of turkeys to pick up their feed," said an old lady to whom I was recounting my turkey experiences, "When I was a girl, back east, our hen turkeys used to hatch their broods and take them away into the woods. They stayed there all summer and we never saw them till frost came. Then we went and brought them in, and such turkeys you never saw!" There is the secret of raising turkeys. "Picking up their feed" is the magic word. Unfortunately we have very little such range here in California as those turkeys had, but the more nearly we can approximate nature's method, the better for our poults.

Probably it was my failure with the first brood that made me resolve to raise the second or die in the attempt. When I looked into the nest that morning and saw those 10 lively poults, already beginning to ask for food, I said, "I'll starve you, but I'll raise you," and I began by making them wait 48 hours for their first meal. They were on the ground where they could pick a little, and had sand and water, nothing else. It hurt me worse than it did them, but I let them wait.

The pen I put these poults and their Buff Orpington mother in was ideal. It was a small pen which had been planted to grain last fall and not used since. Part of the grain had been cut and part was standing, so they had some litter to scratch in and something to pick at. The pen was sheltered from the west wind and got the first beams of the morning sun.

That first week was foggy and rainy after the first day or two. Several nights we had to carry the coop into the feed house and several mornings the little fellows had to stay shut up till the ground was dry enough for them. This is the sort of weather that is supposed to kill young turkeys, but these stood it splendidly. When the coop was outside I took care that first week to shut hen and poults in at night so that they could not get out while the ground was damp. After about a week the poults began to crawl through the fence into the chicken yards, so I transferred them to a wire coop on the clean new oat stubble on the adjoining lot. The hen was confined to the coop, and the turkeys came and went as they pleased. As the poults grew older I let the hen out in the middle of the day, but she still stays in while the fog is on in the morning, so that she will always be there to hover the poults when they need her. When I look out at half-past five or so in the morning I see the poults scattered over the stubble, hunting bugs, while Mrs. Orpington sits in the coop with outspread wings, ready to cover any chilly youngster.

I was much puzled, when I first began to raise turkeys, to know what to do about the hen. So many writers object to letting the chicken hen raise poults, because she feeds them too much, or drags them around too fast, or is infested with lice, or takes them into the wet grass too early in the morning. I tried one brood in the brooder and I want to say to any one who is perplexed as I was by all these criticisms of Mother Biddy; "Don't believe them. A hen needs managing and some hens are not fit to be mothers of chickens, let alone turkeys, but a good, quiet, motherly hen is better than any brooder, if she is properly managed." With a large brood of turkeys and just the right sort of brooder one might be successful, but the turkey needs even more than the chick the peculiar hovering warmth of the old hen's wings, and a little common sense on the part of the attendant will make up for what the hen lacks in intelligence. She doesn't know any better, to be sure, than to drag her babies out in the dewy grass at five o'clock in the morning, but it is not necessary to let her. If she is given feed for them, she may feed baby turkeys to death, but it is not necessary to give her feed. If she is not dusted she will probably have lice, but why not dust her? Nothing is easier. It is only a question of dusting her often enough.

To come back to the feeding, which is, after all, the main thing: I had said over and over, "Keep them hungry," "Feed always less than they want," even when I was feeding my first brood to death. It is a difficult matter to draw the line between too little and too much unless you have some rule to go by, and most of the printed instructions on turkey feeding are painfully indefinite. Just about the time this brood was hatched I found in an article by a Missouri woman this rule: "Do not give more than a heaping teaspoonful to 15 poults, five times daily." A teaspoonful! Just think of it! It seemed incredibly little. Nevertheless I tried it. That is why my poults are all alive.

The mixture I gave, after the first feed, which consisted of rolled oats scattered on the sand, was made up of the results of all my reading, yet different from anything I had read. I first chopped an onion (a young one), a little tender lettuce and a small piece of very stale cracked wheat bread together. A teaspoonful of this mixture was mixed with a teaspoonful of cottage cheese and a little fine chick grit added. At first, as the weather was damp and chilly, I sprinkled in a little black pepper. One teaspoonful of this mixture made a meal the first day or two, but the poults were so hungry I soon increased it, though I did not go over two teaspoonfuls for a week or perhaps more. In the matter of amount one must use judgment, and be guided by the hunger of the poults. After a day or two I began to mix in a little pinhead oatmeal, which is a fine feed for both turkeys and chickens, and put grit in but once a day, though they had it before them till they were put out on range. Sometimes I mixed in cracked wheat for the evening meal, but the cracked wheat which was sent me contained a little corn, and I feared to use it without first picking out the corn.

The hen is a problem when one feeds such a small amount. The books say, "feed her by herself," but that is easier said than done. I finally decided, since my hen would not eat alone, to let her go hungry, and in what I fed the poults, no allowance was made for her. She would taste, that was all, and they ate everything up so quickly she had no chance. After perhaps a week I began throwing a little wheat into the coop for her. The poults did not care for it at first, and now they are gradually learning to eat it, just as they should.

When bread is used, it is very important that it be really stale and merely dried or toasted. I don't think the kind matters as much as its dryness. If one has not really stale bread, it is better to use rolled oats.

After about ten days, I cut down the number of feeds per day to three, though I continued to give either a head of lettuce or chopped lettuce and onion tops between meals. Some people never give more than three meals a day, but it seems to me it is more according to nature to feed a very little and feed it oftener,. just as the poult, if left to the care of the turkey mother, would pick and eat and pick and eat. Of course, when I decreased the number of feeds, I increased the amount but they were on the stubble by this time, with access to an alfalfa patch, and I could see by feeling their crops that they were picking up a good deal, so I still kept them hungry.

Now at four weeks of age, my poults have rolled oats and wheat for breakfast, a head of lettuce in the middle of the forenoon, cottage cheese with the chopped green (always some onion) and a little oatmeal or cracked wheat at noon, and at night either cottage cheese or hard boiled egg with green and the wheat and rolled oats. I want to work them on to cooked liver instead of cottage cheese, but they like the cheese so much and it is so good for them it is hard to make the change. Hard boiled egg I do not care much for, but it makes a little variety, now they are old enough to stand it. It was boiled egg that I fed my ill-fated first brood on, and they all died of diarrhoea.

I do not know that it is necessary to feed as much onion as I have given, but it is safe, and onions are cheap —cheaper than medicine, a good deal. Cottage cheese is said to contain an acid which kills, or at least prevents the multiplication of, the bacteria which are found in the intestines of all young fowls. Onions keep the liver, which is the turkey's weak point, in order. Warmth, dryness, clean quarters and clean bodies furnish the environment which conduces to healthy growth. Exercise does the rest. It is all very simple once you have learned the lesson, but so hard to learn except by doing the wrong thing first.

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Much benefit is likely to result, without any possible harm, if the hens are compelled to work in clean litter for their grain at all seasons.

Questions and Answers

THE EDITOR AND STAFF

Questions to be answered in this department should be received at this office one week before reply is expected. Write plainly on one side of the paper and sign full name and address. Unsigned communications receive no attention.

Roup

My chickens start in with sore eyelids, only they don't seem to fester but stick together with a yellow water. The eyelids swell so the chicken is unable to see and the lids crack along the edges. I have greased them and put peroxide and boracic acid on them but it doesn't seem to do any good. I have lost four already. Could you kindly name the disease and suggest a remedy. I feed them cracked corn twice a day. They run out all day and have green feed. I also give them milk.—Subscriber.

This is "roup of the eyes," and like all forms of roup it is exceedingly difficult to cure. The easiest method of treatment is dipping the heads of the affected fowls in a one to two per cent solution of permanganate of potash. The nostrils are pressed together between thumb and forefinger in the direction of the beak two or three times and pressure also applied between nostrils and eyes in an upward direction. This helps to loosen the discharge in the nostrils and eyes. The bird's head is then plunged into the solution of permanganate of potash for 20 or 30 seconds. This treatment should be repeated twice a day till all symptoms have disappeared.

Another remedy is the washing out of eyes and nostrils at least once a day with two per cent boracic acid in a decoction of camomile flowers. Personally, I don't believe in doctoring roup. It is almost always caused by either too close sleeping quarters or a draft on the head through a crack or a knot hole. Stop up the cracks; put your chickens where they will have as much air as you like yourself; cleanse the eyes once or twice with some antiseptic solution; then if they do not improve in a few days, kill and bury deep. Fowls that have once had roup are of very little use afterward and should never, under any circumstances be used as breeders.

Cracked corn alone is not a good ration, especially in summer. Wheat or rolled barley for the grain feed is better, with a pan of bran and beef scrap or fish scrap to nibble at between meals. If they have all the milk they want the beef scrap may be omitted. Use one part beef scrap to seven or eight of bran.—J. A. K.

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THE CLIPPER
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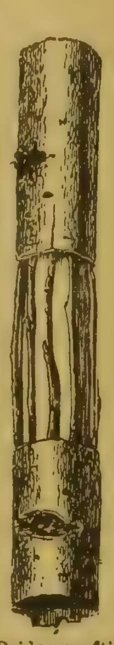
Summer Pruning of Apricots

How can one tell fruit wood on young apricot trees?

The apricot is like a plum in that it bears on old wood as well as the current year's growth. It is difficult to tell at this season which buds will produce apricots and which leaves. Severe spring pruning or that done at this season will develop the fruit buds materially. Do not summer prune one or two year old trees of any kind. It retards their growth.—J. W. M.

Girdled by Gum Disease.



Bridge-grafting of a girdled trunk.

In caring for young trees suffering from gum disease will you kindly advise if there is any known cure for a tree after it has once become girdled? I have heard that with some plants a cure is effected by putting strips of freshly cut, healthy bark across the girdled portion and connecting each end of the strips with the healthy bark above and below the part girdled, after which the strips are tied securely in place. Would this treatment be advisable with citrus trees? — Subscriber, Exeter.

Where the tissue is so diseased that it has been completely girdled the under or cambium layer of bark would be destroyed and strips of healthy bark laid over would not attach and grow to the dead tissue, nor to the hardened and mature wood of the trunk. We have, however, seen gophered trees taken immendiately afterward while the moisture was still in the cambium layer and it was in fairly fresh condition where "skin grafting" was followed with success. If the tree is in fairly healthy condition we would suggest scraping or chiseling away the diseased tissue and painting with Bordeaux paste. (See issue of the Cultivator of January 22, 1914.) Then secure scions from a healthy young tree, say larger than a lead pencil, and "bridge graft" these in, beveling off ends to secure perfect bark contact. An idea of the method may be had from the engraving. Tie firmly both the top and bottom, and waxing aids in preserving the trunk.

Apricot Scab

I am sending you some apricots badly infested with brown scale. It was so bad in some orchards this year that the canneries refused to handle the fruit. I am told it is caused by the damp and cloudy weather of this season and that in ordinary years there is very little of it on the fruit. Kindly give remedy and time of application.—Subscriber, Ontario.

We do not find any scale, or rather scale insects, on this fruit, but it has been seriously affected with scab caused by a fungus growth. Bordeaux mixture applied when the trees are dormant is a preventive and in a season like this it would have been an excellent thing for the fruit. There is no treatment which can be given to the fruit once the trouble appears. As a rule it does not appear with sufficient regularity to make spraying every year profitable. It has been worse this year in all parts of the state.

Grass Named

I enclose specimen of grass which grew on vacant lot here, where it attained a length of five and one-half feet wthout any irrigation. Would you please give me its name and tell me whether it is regarded as of any value as a forage plant?—"Ignoramus," Pasadena.

This is Lolium temulentum, a European grass, not desired there as forage and believed to be deleterious to milkng stock.

Layers or Roasters?

This spring I embarked in the poultry business, have successfully raised 250 Leghorns and am now at a stage where I have considerable time, some money and an idle brooder house on my hands. Which, in your estimation, would prove most profitable, considering that I am unable at present to hatch my own chcks, and must pay 10 cents each for them: To raise Leghorns, keeping the pullets for spring and summer layers and getting twice as much for my cockerels as for the spring hatched; to raise a heavier bird and sell pullets and cockerels for broilers; what month would be best to get them started?—Subscriber.

If you can get good, hardy, fast growing stock for 10, or even 12½ cents apiece, it will probably pay you best to buy chicks of a heavier breed and raise them for soft roasters or fryers. September is the best month for fall hatching. Every chick should be out of the shell before October 1, for the later chicks feel the effect of the rains, which sometimes come in November. Chicks hatched in September reach broiler size between Thanksgiving and Christmas, when there is little market for broilers. If they are kept till the first of Februrary they will strike a splendid market, for the Christmas roaster demand is past and the spring broiler market still ahead. Farmers of the South Shore district in Massachusetts have built up a notable roaster business, hatching chicks n the late summer and marketing them in the early spring, and it is a wonder more Californians have not learned the trick. Any heavy breed will answer for this purpose, but they must be good, hardy stock. Everything depends upon this. If you can get the chicks when you wish, try to have them all about September 1. September is always a hot month, and you can raise them in fireless brooders. The objection to raising pullets for spring and summer layers is, that they begin to lay too early—that is, before they have the size they should have—and lay too many small eggs.—J. A. K.

Ration for Horses and Mules

How many pounds of rolled barley, good grain hay (mostly barley) and alfalfa hay, equal parts, would you advise feeding 1400 to 1500 pound horses and 1100-pound mules doing hard work? I have difficulty in convincing ranch teamsters that horses should not be fed all the hay they will eat.—Subscriber, Lindsay.

Horses and mules cannot stand doing hard work for any length of time when fed hay only, no matter how good the qualty of this is. The heavier the work they are doing, the greater proportion of the ration must be composed of grain. Horses of the weight given, when doing heavy work, will require somewhere around 12 pounds of grain and 12 to 15 pounds of hay per day to keep them at an even body weight. If equal parts of grain hay and alfalfa hay are fed, a mixture of barley and oats, or barley and wheat bran, will be likely to give better results than barley alone, but rolled barley will probaby be considerably cheaper than mixed grain at current market prices for grains; if barley is fed as the sole grain feed it may be well to reduce somewhat the allowance of grain hay and to feed more alfalfa. Mules doing heavy work may be fed 10 to 12 pounds of grain and 12 pounds of hay daily. They take less kindly to barley than do horses and may therefore be fed either of the grain mixtures given to good advantage.—F. W. Woll.

Drying Figs.

Will you tell a Northern woman how to prepare figs for home use by canning, preserving, etc. Also, is there an opportunity for a farmer's wife to prepare them for market? If so, how?—C. A. V., Laveen, Arizona.

As to drying, would refer the subscriber to articles in last week's Cultivator. Of course, there is always sale for well cured figs and in Arizona we doubt not there would be a market for all that might be offered. As to preserving, pickling, etc., this week we are giving recipes in the household department of the Cultivator. In regard to a market for these, that would depend upon local conditions. Would refer the subscriber to the article by Mrs. Roberts of Grass Valley in the Cultivator of July 2nd regarding the canning of cherries, pears, peaches and fruits of that description and the market she secured in the Hawaiian Islands. Our inquirer refers to being a Northern woman. Perhaps her own neighborhood in the North would appreciate the opportunity of securing home canned figs, preserves and pickles, and orders might be taken and several hundred cans disposed of in that way. The same issue in which Mrs. Robert's article appeared also contained a fund of information regarding canning. Either tin or glass may be used. Of course the tin is to be preferred if railroad shipments are to be made. Where personal deliveries can be made or care exercised in packing glass might be used.

Dried Fruit for Home Use.

Is it best to dry peaches and apricots for home use without sulphuring? If sulphuring is better how may it be done on a small scale?—Subscriber, Fallbrook.

If good ripe fruit is dried it is sure to turn very dark before it has cured sufficiently to store away, and when it is so dark it does not make an attractive dish on the table. Argue as we may, we still "eat with our eyes" and unattractive things on the table are not an aid to the appetite, so if sulphuring can be done and it will make our fruit more attractive and still be healthful, by all means sulphur. For our own table most emphatically we wish sulphured fruit, providing the sulphuring is properly done. It gives a golden appearance and where fruit is washed before cooking the infinitely small amount of sulphur dioxide remaining would not be injurious. One can make a sulphur box very cheaply of matched lumber with cleats along the side for pushing in the trays one at a time, the same as drawers, and after filling a pit may be dug for placing the sulphur underneath. The sulphur may be lighted by pouring a bit of alcohol on, or if far enough below the tray so there is no danger of fire a wisp of paper may start it off. Another form of sulphuring house is to make a light frame and cover with tarred or building paper. Use care in tacking so that it is as nearly air tight as possible, then the trays may be stacked on the ground or over the sulphur pit and when all ready to light the sulphur the little box may be lifted by conveniently arranged handles and placed over the stack of trays. A few shovelfuls of dirt around the sides aid in making it air tight.

"Pusley"

Through the planting of unclean clover seed pusley has started in my lawn. Have hoed up and killed everything but the pusley, but in spite of all my efforts the latter is spreading to adjoining ground. How may I exterminate it? Does it propagate by seed or from the roots? Though I dig up and burn every sprig I can find it seems to come thicker than ever.—Subscriber, Manhattan Beach.

Certainly our subscriber is situated so as to appreciate the good old expression, "meaner'n pusley." He seems to be doing about all it is possible to do, for it is practically a case of persistence and hard work when it comes to this pest. By all means continue the burning or disposing of the weeds as soon as pulled for the fleshy stem of the purslane plant contains sufficient nourishment to continue ripening the seed for weeks after it is pulled out of the soil, so either burn or put into the poultry yard, for it is a good poultry food, or compost and secure sufficient heat to rot down the seed. The only way to dispose of the seed now in the soil is to allow it to sprout and then continue pulling out and destroying. If the seed came in clover seed which was secured for the lawn the seed dealer who was so careless as to sell such stuff should make the loss good. It does not propagate from the roots.

Dried Peaches.

How are peaches dried for commercial purposes? Is the use of sulphur permitted?—Subscriber, San Gabriel.

Sulphur is still used though all growers are urged to sulphur as lightly as possible and handle so that the fruit will not require sulphuring after drying. Sulphuring after drying is what caused all the trouble a few years ago with the department of agriculture. The fruit is cut, laid on trays cut side up, and some orchardists prefer to spray slightly with water just before putting into the sulphur house. This is not so essential, however, if fruit is quickly put into the sulphur house after cutting. Too long a period should not elapse between cutting and sulphuring as the fruit is liable to darken. To give plans and specifications for best house and yard for handling of fruit would require several drawings with plans of yards, trackage, etc. In a word, appliances should be at hand to permit of as economical handling as possible. Manufacturers are putting out portable railways and cars, with turn tables, which make the handling very economical. The sulphur house is built of exactly the right size to take one dry yard carload of fruit. Some large yards run a dozen or more of these sulphur houses at a time. The fruit is put into the sulphur house after spraying. The sulphur is placed underneath the trays and far enough below the lower one so that there is no danger of setting on fire. In fact a small pit is usually dug, with entrance or draft frrom one side. Some keep the sulphur house perfectly tight from the start, others prefer to ventilate so as to secure thorough charging of all the air within the box. After sulphuring has been going a few minutes all the vents are closed and the fruit kept in the fumes in the tight box from 30 minutes to two hours. The difference in time depends upon the kind of fruit, condition as to ripeness, etc. Here is where experience will dictate the method of control. The sulphuring not only makes the fruit of a more attractive color, because of the bleaching, but facilitates drying since sulphured fruit will dry in almost half the time required by the unsulphured.

Veterinary

Answers in this column by Dr. Wm. Petrie, 2714 South Harvard Blvd., Los Angeles, are without charge. For immediate mail answer remit $1.00. In writing questions give full symptoms or particulars of injury of animal.

Fistula in Goat's Udder

Have a milk goat that gives milk from one teat that leaves a reddish brown sediment after it stands a few hours, about a small teaspoon to a quart of milk. There is a small growth or sack-like object on the inside and about three inches from the end of the teat. When I first found it I found that my forefinger pressed in it while milking and that there was a slight secretion on the outside when I squeezed it, but no opening on the outside apparently. Since then I do not touch it when milking and the residue is gradually growing less. I have only had the goat a week and have had no trouble of any kind with her so that she could have been hurt. The former owner says he never has found anything the matter with her milk and has sold it for babies' use. Can you recommend a cure from description or will a veterinarian have to examine the goat?—Subscriber, Sherman.

As you say, the trouble has probably been there for some time. It may have been caused by a bruise, but from your description, whatever caused it, there is a sack between the outer skin and the inner lining of the teat and there is an opening from the sack into the milk duct. The sack secretes the reddish brown matter that settles to the bottom of the milk and since you are more careful not to squeeze the bunch when milking you are forcing less of the matter into the milk. The only remedy that would suggest itself is an operation. By splitting the skin from the outside and dressing the inside of the cavity with a caustic it would probably heal all right. The only bad result that might follow such an operation is that the milk may come out through the opening and cause a milk fistula. If you wait until the goat becomes dry the danger of milk fistula would be reduced to a minimum. While the matter in the milk might not be injurious to one's health, still one would not care to use it for food. It seems that the former owner should be willing to take the goat back and return the money if you wish him to do so or make it right in some way. It will be necessary to have a veterinarian operate, as they are familiar with such conditions and know how to dress the wound.

Rabbits Affected

I have some rabbits with a sort of disease in their ears which makes scabs. The disease does not get any better nor much worse. Otherwise the rabbits seem to be in perfect health. They are lively and eat well. —Subscriber, Anaheim.

The scabs are probably caused by a small mite working in the skin. Soak a small sponge or cloth with engine oil and rub it over the scabs until the parts are well soaked. Repeat the application in a few days. Three or four treatments will probably be sufficient.

Skin Disease

I have a cow three years old. Since I have had her, which is now a year, she has had sore spots on various parts of her body which are about the size of a quarter. The skin on her neck and shoulders is very rough, but at times the roughness has disappeared. My neighbor says they call it surface hide. She has been fed alfalfa and oat hay. Kindly give treatment.—Subscriber, Covina.

The trouble is probably due to a fungus similar to that which causes ringworm. Try crude oil rubbed in well. If that does not cure it in two or three weeks then have your druggist prepare an iodine ointment as follows: Iodine crystals, two drams; tincture of iodine, two ounces, and enough lard oil to make four ounces. Wash the parts clean and apply the ointment twice a week.

MONEY MAKING LITTLE LINERS

In this department we will insert your advertisement under a classified head for 12 cents per line per issue. No ad accepted for less than 3 lines. Our classified columns are the clearing house for our many thousand readers.

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Fine Gem baler, $125.00; La Dow baler, $95.00. Whitman Power baler, mowers, rakes, binders, headers.

POTATO MACHINERY

Potato diggers, planters, cutters, cultivators, harrows, plows, Holt tractor, sprayers, sundries.

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Special Sale: 8 H. P. Stearns, $135.00; 20 H. P. Stearns, $195.00; 28 Lambert, $295.00; 35, $350.00; Ames double acting, deep well pump, $135.00; single acting pumps, $20.00 to $60.00. Centrifugal pumps half price.

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Bankrupt sale new stocks and dies half price; gears, large pipe fittings, pulleys, belt.

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For Sale—Used and new gas engines, 2 H.p. up, rebuilt and fitted with modern equipment. 22 years' experience enables us to repair and rebuild gas engines correctly. Get our prices. Lloyd, 806 N. Main, Los Angeles.

LIVE STOCK

Ohio Improved Chester White (O. I. C.)—A few male pigs of March and April farrow. Everything else sold. Have a limited number of sows bred for October farrow. Am booking orders now for these. All stock cholera immune. Crated and registered free. C. B. Cunningham, Mills, Sacramento County, Cal.

Grape Wild Farm Thoroughbreds—Guernsey Bulls of A. R. Breeding. BERKSHIRE HOGS. Finest herd in the state. All ages for sale. A. B. Humphrey, proprietor, Mayhews, Sacramento Co., California.

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Thoroughbred Berkshire Boars of all ages from developed and large-boned hogs. Riccomi Bros., Mountain View, Cal.

For Sale—Young, registered Berkshire boars; fine, strong stock, weighing about 150 lbs. Stanislaus Ranch Co., R.F.D. No. 1, Crows Landing, Calif.

Glenview Poland China—Stock for sale. Chas. R. Hanna, R. F. D. No. 3, Riverside, Cal.

N. H. Locke Co., Lockeford, Cal.—Choice young Jersey bulls for sale.

SEEDS AND PLANTS

Luther Burbank Spineless Cactus (Only)—Live stock fed on this velvet cactus, grow fat; hens lay more eggs, cows give more and better milk, and horses grow sleek. Why not get a start in the best, costs no more to raise than that which they call just as good. Ten slabs for $5.00, with one fine fruiting sort free. Address or call at H. L. Bauers' Cactus Nursery, 4401 Hammell St., Los Angeles.

$ $ $ $pinele$$ Cactu$. All varieties Burbank's fruiting and forage plants 10c up. Plant now. Black Bros.' Nursery, 455 Lucas, Los Angeles. $ $ $

Berry Plants and Rhubarb. My new Berry Book ready about October will be worth sending for. Louis F. Scribner, R. F. D., Pasadena, Cal.

Thornless Cactus Slabs for sale at 5 to 15 cents each. Chas. R. Hanna, R. D. No. 3, Riverside, Cal.

HORTICULTURAL PRINTING

Catalogues for the seed and nursery trade. The live stock and poultry industries are a specialty with us. Two thousand illustrations to select from. Write for prices and samples. The Kruckeberg Press, 237 Franklin St., Los Angeles.

RABBITS

New Zealand Reds, prize stock, young for sale; buy now and raise for the winter shows. Mrs. C. A. Richey, R. F. D. 8, Box 557, Los Angeles.

BEES

We offer 200 colonies bees and fixtures with or without 5 acres land suitable for berries, poultry, etc. Cash or easy terms of payment. Will lease for several years with privilege to buy if satisfied. Particulars on request. Spencer Apiaries Co., Box 14, Nordhoff, Cal.

FARM LANDS FOR SALE.

For Sale—26 and [illegible] acres of [illegible] valley land in Ygnacio Valley, Contra Costa Co., Cal., five miles from Concord on the O. A. E. Electric R. R., bordered on two sides by county road, [illegible] two-year old grape vines, [illegible] and [illegible], 2500 eight year old grape vines, [illegible] almond trees, [illegible] walnut trees, Concord [illegible], good [illegible] orchard, good water, all kinds of [illegible], two dwellings, one barn, sheds and outhouses, barn full of hay, farming tools, price [illegible], half cash, rest at 6 per cent. C. A. Tarwater, owner, R. F. D. No. 1, Concord, Cal.

VICTORIA, AUSTRALIA, WANTS SETTLERS
Special inducements, government land, railways; free schools; cheap irrigation, 31 years to pay for farms adapted to alfalfa corn, grains, fruit, etc.; climate like California, ample markets, reduced passages, special excursion next November. Free particulars from F. T. A. FRICKE, Government Representative from Victoria, 687 Market St., San Francisco, Cal., Box X.

For Sale—Twenty acres adjoining prosperous town, one water stock in Mutual Water Co. with each acre. Conceded to be the best beet and alfalfa land in the state. About 600 feet from the station and beet dump. Five-year beet contract if desired. Price, $200. M. G. McNeely, Alpaugh, Tulare Co., Cal.

Florida Land—Three Months Free—Subscription to the Indian River Farmer. For truckers, fruit growers, citrus, general farmers and folks who want to know about Florida. Address INDIAN RIVER FARMER, Department X, Vero, Florida.

Apple Orchards—Large and small, in the only apple producing section in California. The greatest section west of Missouri River. Write for booklet. Geo. W. Sill & Co., Watsonville, Cal.

Ranches, homes, acres, lots, exchange; send for free list. Wilson Bros., Santa Cruz.

POULTRY

CROLEY'S POULTRY CONDITION POWDER

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How to Make Money—Mrs. A. Basley's latest Poultry Book is without exception the best ever written. The secret of how to raise every turkey hatched and the "Basley Formulas," now published for the first time, are worth many times the price of the book. The "Western Poultry Book" is a practical book by a practical woman. Price $1. Order from Cultivator Publishing Co.

Poultry Wanted—We pay the highest market price for all the local poultry we can get, no matter how large the quantity; also fresh ranch eggs. We remit immediately. National Poultry Co., successors to Allaway & Layton Co., 607 E. Third St., Los Angeles, Cal.

Barred Rock Cockerels (Hawkins' Royal Blue Strain) ready for fall mating. All the popular breeds of baby chicks every week after Aug. 15th. Order early and avoid the rush. Enoch Crews, R. 1, Santa Cruz, Cal.

Baby Chicks—Jumbo egg strain. White Leghorns, $9; best Anconas, $12; Brown Leghorns, $9; White Minorcas, $12 per 100. Sand Ridge Hatchery, Kerman, Cal.

Barred Rock and R. I. Red baby chicks. If you want to raise some broilers send we your order. Price $10.50 per 100 until September 15th. J. W. Lyon, Gardena, Cal.

White Minorcas—The most popular utility breed of today. Prolific layers of large white eggs. Baby chicks, $12 per 100; eggs. Order early. E. Cauble, Kerman, Cal.

Barred Plymouth Rocks — "None better." Special prices for May and June. Write for 'em. C. H. Vodden, Los Gatos, Cal.

Thoroughbred Plymouth Rock Cockerels for Sale—$2.00 each. Very fine stock. R. E. Threlkel, Folsom, Cal.

TREES.

For Sale—One and two-year-old Washington Navels and Valencia Orange Trees. Eureka Lemons and Marsh seedless grapefruit, for Spring 1914 delivery. Write for prices, or call and examine stock at Morris Citrus Nurseries, Cor. Juanita and Valley Center, R. F. D., Box 34, San Dimas, Cal.

The 1200-Acre Nursery, growers of 1500 varieties of trees and plants. OREGON NURSERY CO., Orenco, Oregon. Sales office, 522 Chamber Commerce, Los Angeles, Cal.

1000 Avocado Seedlings—Pots, also can furnish nice plants, bare root, at low price. A. A. Quint, R. D. No. 2, Pasadena, Cal.

For Sale—Eureka Walnut Trees, budded on Native Black Walnuts. Choice stock. Order immediately. Don't delay. Wm. Holve, Fullerton, Cal.

Citrus Nurseries, Murphy Oil Company, East Whittier, California. Selected stock for sale; inspection invited.

You Future Nurserymen—Write for prices on special stocks of plants to start business with. Ballou's Nursery, Pasadena, Cal.

Budded Citrus Trees and seedlings at fair prices. Will take auto or land. J. P. Butler, Jr., P. O. Box 145, Lamanda Park, Cal.

MISCELLANEOUS.

Free for Six Months—My special offer to introduce my magazine "INVESTING FOR PROFIT." It is worth $10 a copy to anyone who has been getting poorer while the rich, richer. It demonstrates the REAL earning power of money, and shows how anyone, no matter how poor, CAN acquire riches. INVESTING FOR PROFIT is the only progressive financial journal published. It shows how $100 grows to $2200. Write NOW and I'll send it six months free. H. L. Barber, 430, 28 W. Jackson Blvd., Chicago.

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One pair DOLLAR VALUE Men's OVERALLS FREE with order for 5 pair at 85 cents each, postpaid. Sizes, 34 to 44.
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Wanted—A middle aged man and wife on a small ranch—man to milk two cows, have care of poultry and vegetables and help with a few hives of bees; woman to do the house work in family of two. No neighbors, schools or church—nearest town 15 miles distant. Dr. Harold Sidebotham, St. Ynez, Cal.

Farms Wanted—We have direct buyers. Don't pay commissions. Write describing property, naming lowest price. We help buyers locate desirable property Free. American Investment Association, 12 Palace Bldg., Minneapolis, Minn.

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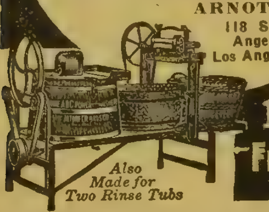

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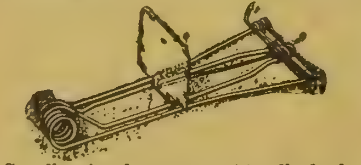

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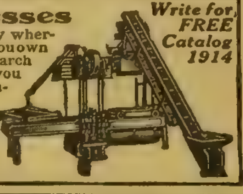

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Write for FREE Catalog 1914

ADVICE to farmers, orchardists and purchasers on all soil prob'ems at rates within their means. Write for particulars. MARK WALKER, B. S., 211 West 1st Street, Los Angeles, Cal.

Articles of incorporation have been drawn up for the Fresno County Raisin Day Festival Association.

Household Department

WHAT DO THEY SAY?

What do the birdies say of you,
As they chatter upon the tree?
Do you think they are saying, "Those children there
Are as kind as they can be?"

What do the pussy cats say of you,
As they chat on the garden wall?
Are they saying, "Those children are very good;
They never throw stones at all?"

What do your playmates say of you?
Are they saying, "They are so nice!
They never sulk or throw up a game,
Nor ask for the same 'turn' twice?"

What do your teachers say of you,
Do they say, "They learn so well!
They are never late, and they run at once
Whenever they hear my bell?"

If birds and pussies, and playmates, too,
And teachers and parents say
All this of you, I am very sure
You are happy the livelong day.
—Selected.

MR. SWEET SWEET

Written for California Cultivator By Mary H. Thomason

The other day as I went out to feed the chickens I noticed a little canary flying around and around my head with a plaintive little note that sounded like "Hheat, heat!" And then he perched on the chicken fence and repeated his complaint, "Heat, heat!"

I knew he had always said "Sweet, sweet!" before, and that something was the matter, and I looked and looked, and, of course, when you look you nearly always find.

Now, what do you suppose the trouble was? Why, the watering trough was empty so far down that little Mr. Sweet Sweet could not get a drink, and someone had forgotten to let the tap drip! Of course it was dripping soon after that and he sang again "Sweet, sweet!"

But I could not let him get into the "Heat, heat" habit. It is bad for us to form unhappy habits, you know.

It just happened that there was a broken limb in the big pepper tree that was just made to hold a shelf that would hold a pan of water right in Mr. Sweet Sweet's own pepper tree house. And the two little boys who liked to play under the pepper tree nailed a strong shelf on the sawed-off limb and put a pan on it, and do you think the water in it ever gets too low for Mr. Sweet Sweet? But the best of the story is this: Mr. Sweet Sweet brought his family there, and they told their uncles, aunts and cousins and they told all their connections. And now every day that pepper tree is full of canaries, singing as though their little throats would burst, and drinking and bathing and splashing, two and three at a time! And not one of them knows how a cage looks, unless you call the blue sky one. And we think there is a happier note in their song than there is in the songs of the other birds. If you would like to have as many happy birds in your pepper tree as we have in ours perhaps you would like to try our plan.

THE LATEST BY PARCEL POST.

How would you like to receive by parcel post your Sunday dinner cooked to a turn and ready to eat? A young housekeeper last week proved to her family that she had developed into a famous cook. She packed a big box with a roast chicken and "fixin's" and sent it to her home folks in town.

FATHER KNOWS

"My son," said father, "never borrow money."
"Why not?" asked little Jack.
"Because the day is sure to come
When you'll have to pay it back."

TIMELY RECIPES

We have had request in the last week for recipes for dill pickles and preserving figs. Here are some excellent ones. The dill pickle recipes were sent in by housekeepers; the fig recipes are taken from a government bulletin on the fig written by Gustav Eisen:

Dill Pickles.

Dissolve salt in water until you have a brine that will float an egg, then add half as much more water as you have brine. Wash your cucumbers in cold water. Into a stone jar put a layer of cucumbers, then one of grape leaves, and then a layer of dill. Repeat the layers until the jar is filled, pour the brine over all, cover with a cloth, then a large plate, and put a weight on the plate. Remove and wash the cloth occasionally.—S. M. B.

I have a recipe for dill pickles that I learned by experimenting last year and find it the best I have ever tried. It is economical as it saves the expense of buying vinegar, too. Take dill tops with the seed on and make a layer in the pickle barrel and sprinkle over it a small handful of salt, and then put in a layer of cucumbers and another little handful of salt, and then a layer of apple peelings, and so on with dill and apple peelings and salt between the cucumbers until you have your barrel filled. Put a weight on it to hold pickles under the brine. Put in about three gallons of water when you begin to fill your barrel, and every time you put in cucumbers put in some salt as it keeps the peelings as nice and firm as sauerkraut.—Mrs. S. J. Hammers.

Preserved Figs.

Gather figs with stems on just before they are ripe enough to be eaten. Scrape off the skin carefully and drop the figs into a kettle of clear, boiling water and leave half an hour. Then take out and allow to cool with the stems up. Make a syrup of a pound and a half of sugar and a half pint of water to each pound of fruit. Boil until nearly roping; put in the figs carefully and keep them under the syrup while cooking. If other than the natural flavor is desired, put a clove in the blossom end of each fig or cook them with a sliced lemon from which the seeds have been removed, adding a little ginger. The preserves keep well if made with an equal weight of sugar and figs.

Canned Figs.

To three quarts boiling water add two heaping tablespoons soda; dip figs in this water for one minute and skim them out; then wash thoroughly in three or four waters, or until there is no color left in the water. To ten pounds of figs add eight pounds of sugar; add just enough water to dissolve the sugar; when boiling hot drop in the figs, having first selected them with care so as to avoid any that are broken or overripe; let them simmer slowly two hours; remove figs and boil down syrup until thick; replace figs, bring all to boiling heat, can. A few slices of lemon will improve the flavor.

Pickled Figs

To 10 pounds of figs allow four pounds brown sugar, one quart strong vinegar, one large cup of whole spices of the following kinds: Cloves, cinnamon, allspice and cassia buds. Boil vinegar, sugar and spices first; when sugar is well dissolved add the figs and boil until tender. Place all in jars. Pour off the liquid for three mornings; let come to a boil and return to the figs, then seal the jars.

Candied Figs

Use figs not yet fully ripe. Place in glass jars, pour on salt water and steam until soft. Pour off the salt water and pour over the fruit a syrup made of one cup of sugar to three of water. After a day take out, place on wire screens and allow to drip for one or two days in a warm place. Place again in jars or earthenware, cover with a syrup made of one cup of sugar to one and one-half cups of water and leave for one day. Then take out and allow to drain, after which cover with a syrup made of one cup of sugar to one-half cup of water. Allow the figs to remain in this as long as possible, or until required. Take out, drain and roll in confectioner's powdered sugar in a pan made lukewarm. Pack away in boxes in powdered sugar.

Spiced Figs

Peel ripe figs. For 10 pounds of the fruit take five pounds of sugar, one quart of vinegar, one ounce of cinnamon, one-half ounce allspice, one-half ounce cloves, the spices to be tied in a thin bag and boiled with the sugar and vinegar. When the liquid comes to a boil add the figs, a few at a time, to prevent mashing, and boil until they clear. When done put in jars and pour the vinegar over them and seal while hot.

SUMMER WAISTS

Written for the California Cultivator By Aline.

I have seen summer waists made prettier than when new by setting in a vest when they have become too tight across the bust, and any good waist that can be made plenty large enough with a little alteration will last another season.

A white lace waist that is not quite soiled enough to be washed can be freshened considerably by rubbing with magnesia, paying extra attention to the most soiled places and then rolling in a cloth and laying away for several days. When the cloth is removed, shake the waist and brush with a soft brush, and if desired, it can be colored any shade wanted with some good reliable dye for cotton goods. If carefully done it will look like a new waist.

When the lace insertion in a white waist begins to break, whip footing or lace net under it and darn the broken places and it will never be noticed that the insertion is double.

Sleeve irons are a treasure that no woman who does her own blouses can do without; they cost but a trifle and to launder a lingerie waist so that it looks like new is a piece of work that even the most inexperienced can do if she will but give the time. One of the best soap solutions for washing all kinds of white goods, and especially for sheer materials, is made by dissolving some good white soap in about a pint of hot water, then stirring in a tablespoon of powdered borax. When well dissolved, stir enough of this soap solution in the wash water to make a strong lather and avoid rubbing the garment the least bit, even between the hands. Let all the work be squeezing. After lingerie waists are perfectly dry, dip in borax water, using one tablespoon of borax to about one quart of warm water. Wring out and fold in a towel for a few hours, then iron dry and they will be far daintier and more sheer-looking than when starch is used. They also are much easier to iron. All white goods comes out beautifully white by washing in warm suds made with the borax and soap solution. To rub soap over thin goods will thicken the fabric.

KEEPING BRUSHED UP.

A woman who has brought up a big family on a small income, yet has managed to keep mentally alert, says it is due to a Half Hour Club.

This club has as its fixed rule that half an hour each day must be spent in solid reading. There was a leeway of twenty-four hours, after that there was a fine of five cents each day for failure to get through the prescribed reading.

Twice a month the club meets for discussion of the reading done and to collect fines of delinquents and spur them on to fresh effort.

The woman who told of this club says: No one knows what it has meant to me. When you are the one woman in a family of boys, have a bushel basket of stockings to darn weekly, six children to sew for, lessons to be heard, it is a big temptation to stop reading entirely or to fritter spare moments on novels. That half hour a day of solid reading has kept me up with the times, has rested my body and stimulated my brain, and best of all, it has kept me from drifting into a dull woman whom my sons might love, but would pity for her ignorance.

Especially if you live in a small town is such a club of importance. It is easy to stagnate unless a conscious effort is made. The winter season is the time to start such a club among your neighbors. Do not be content with planning a half-hour reading daily for yourself. You will never hold to it without the stimulus of companionship and the broadening interest of the fortnightly meetings.

IMAGINATION.

Have you ever read the poem about the uniminative little girl who

"If told that a chair was a fast motor car
In which she must speed on a journey afar,
Would straightway declare that it couldn't be so;
''Tis a chair, she would say, 'not a car, as you know.'
'But imagine it's one,' they would plead in despair—
It was all to no purpose—a chair was a chair.
And her obstinate humor would break up the play.
It's a terrible thing to be born that-a-way."

Imagination is the power that gives birth to the productions of the poet and the painter. Imagination not only gives us poetry and art, but it also glorifies the commonplace; it lifts us out of drudgery; it makes possible the seemingly impossible. Nowhere do we need the right kind of imagination more than in the home. Stimulate his imagination, and the weary child who wants to be carried home from his walk, comes galloping home on a stick horse. The old way of training children in the schoolroom was to whip them if they didn't keep still; the new way takes the small, restless kindergarten children and turns them into a flock of birds, who, with arms upraised, stretch tired muscles, and fly back to their weaving, happy.

Grown-ups are often ashamed to be imaginative. They are afraid to indulge their imagination lest some one think that they are lacking in dignity. The king's jester in olden times wore cap and bells, and was expected to be as funny as he could be. We used to think the costume was for the amusement of the king; now we believe it was for the protection of the jester. Put a clown's costume on a sober man, and in its shelter he becomes the clown.

Let a poor man imagine he is prosperous, carry himself as if he had money in his pockets, and he finds it easier to get a position.

The wife of President Garfield said she found breadmaking drudgery until she pictured the loaves she was making turning into her sturdy sons and daughters.

The child who can see a fast motor car in the rocking chair has within herself riches which cannot be taken from her. If our children have no imagination, let us try to develop it in them.

"It's a terrible thing to be born that-a-way."—Wallace's.

THE BEST MEDICINE.

Many of the most familiar fruits and vegetables have distinct medicinal values. The proper attention to the things we eat, then, will make them serve both the purposes of food and medicine, and will enable us to save some of the money spent on remedies and doctor bills. The following are some articles of diet which are known to have medicinal qualities:

Apples, carrots and Brazil nuts are excellent for sufferers from constipation.

Asparagus stimulates the kidneys.

Bananas are beneficial to sufferers from chest complaints.

Beets are fattening and good for people who want to put on flesh. So are potatoes.

Celery and onions are nerve tonics.

Cranberries are astringent and correct the liver when it is suffering from inaction caused by overeating.

Dates are nourishing and also prevent constipation.

Grape juice is a laxative, but the skin and seeds are likely to cause constipation.

Honey is a good substitute for cod-liver oil.

Lemon juice is excellent as a gargle for sore throat.

Lettuce has a soothing effect on the nerves and is excellent for sufferers from insomnia.

Onions are conducive to sleep. They quiet the nerves and are good for colds.

Parsnips, like sarsaparilla, are good for the blood and to tone up the system.

Tomatoes are good for a torpid liver, but they should be avoided by gouty people.

Water cress is an excellent blood purifier.—Kansas City Star.

CLEANING LACES.

Few people understand the art of washing laces. Fine laces should be washed as seldom as possible and handled very carefully to prevent the breaking of the very fine threads of which the lace is made.

If lace is very frail, baste to a piece of material before attempting to launder. First, put Ivory soap in cold water and make heavy suds. Now rub soap on lace, but let lie in water a little while; then squeeze in hand to clean, or between the fingers, being sure to rinse thoroughly to remove all soap. Pull lace out straight and lay between folds of towels. Then ring the towel until water is absorbed from the lace.

If starch is desired, use cold starch and a small quantity of bluing, if needed. Press between folds of new lawn. Coffee or tea water may be used to dip white lace in if a cream color is desired. Laces may be bleached by rubbing with lemon juice and salt, then exposed to the sunlight.

When laundering black lace, dip a piece of crepe into a vessel of water, then squeeze it together with the lace, until the lace is thoroughly damp and every part is gone over. To dry, stretch out on a board and pin out all the points.

CHEER UP.

It's the best advice for the woman to follow if she is sincere in her effort to lose years and gain dimples. There may be a sad, sullen, somber beauty, but it's not the kind worth working for nor the kind one wants to look at day in and day out, summer and winter, in sickness and in health, till the final parting.

The woman we love is the woman with the sunshiny heart. And she's the woman we think of when someone speaks about the various types of modern beauty. Perfect features, rose leaf complexions, may last for a time as the cover for a snarly nature. But when they vanish the unmasking is complete.

The free indulgence in emotions may be all very "temperamental." It may seem to be the hallmark of genius. It may distinguish you from your companions and make them treat you a bit different, catering to your whims, which is very flattering. But—it is the quickest and most complete way of destroying health, happiness and good looks that you can find.

One fit of anger means one year of age added to your life.

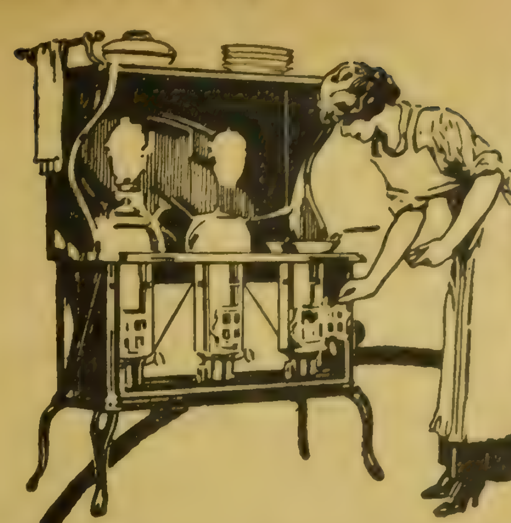
One hour of jealousy means one month of caring and massage and cold creaming before the marks are entirely gone.—Farm and Fireside.

PAPERING WHITEWASHED WALLS

Scrape off every particle of the old paper. Then wash the walls with a mixture of one pound of alum and two gallons of water. If this is thoroughly done, little difficulty should be experienced in making the paper stick. The walls should be allowed to dry before starting to hang the paper. It is best to make the paste the day before papering, so that it will be cold. The addition of glue will increase its adhesive qualities.

WORTH TRYING

A young lady took down the receiver and discovered that the telephone was in use. "I just put on a pan of beans for dinner," she heard one woman complacently informing another. She hung up the receiver and waited. Three times she waited, and then, exasperated, she broke into the conversation. "Madam, I smell your beans burning," she announced crisply. A horrified scream greeted the remark, and the young lady was able to put in her call.—Christian Endeavor World.



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Flavors

Flavor Your Cooking by the Drop — Not by the Spoonfu

Alcono Pure Food Flavors are made from pure oils, free from alcoholic adulterations and will mix with cold water. Four to eight drops of Alcono will do the work of a teaspoonful of the old kind of flavoring extracts.

25c per tube. 6 tubes any flavor $1.25 — postpaid.

SEND FOR FREE CIRCULAR

SUNSET TEA & COFFEE CO., 212 E. 8th St., Los Angeles, Cal.

San Francisco--Los Angeles Produce Markets

Los Angeles Market

LOS ANGELES, July 22, 1914.

BUTTER

Butter arrivals close up to 100,000 pounds daily. Market firm at former quotations.

Prices to trade 4 cents above following quotations:

Creamery Extras	.26
Firsts	.22@23
Country	.20
Ladle	.19

CHEESE

Prices to trade 1 and 2 cents higher:

Eastern Daisy	.18½@19
California Fresh	.13@14
Domestic Swiss	.20
Longhorn	.19@19½
Imported Swiss	.23@25
Oregon	17½@18
Cheddars	.19

EGGS AND POULTRY

Egg market firm and advancing.

Prices to trade 3 cents higher than following quotations:

Fresh ranch, case counts	.29
Candled	.30@31
Northern Case Count	.30
Petaluma-Santa Rosa	.30½

Price to producer:

Hens, lb.	.14@18
Roosters	.7@8
Broilers	.15
Fryers	.18
Roasters	.19@20
Turkeys	.22@27
Ducks	.14
Geese	.14
Squabs, doz.	2.50

LIVE STOCK

The following quotations are f. o. b. Los Angeles on all stock:

Hogs, 175 to 200 lbs., per cwt	9.25
Prime Steers	.7½
Heifers	.6¼
Calves, lb.	.8½
Sheep—	
Ewes, head	4.00
Wethers	4.25@5.00
Lambs, head	4.00

POTATOES

Wholesale selling price:

Sweets, lug	.60@80
News, cwt.	1.40@1.60
Northern Burbanks, cwt.	1.60

ONIONS

Wholesale selling price:

Silver Skins	2.20@2.30
Yellow Danvers, sack	2.50@2.65
Garlic	.12@15

VEGETABLES

Wholesale selling price:

Artichokes, Northern, doz.	.90@1.00
Beets, dozen	.20@25
Beans, String	.4@5
Cabbage	.75@90
Carrots, doz.	.20@25
Cauliflower, lug	1.00@1.15
Celery, doz.	1.00
Corn, Sugar, box	.35@45
Cucumbers, lug	.35@45
Egg Plant	.7@9
Escarole, doz.	.40
Horseradish, doz.	.10@12
Leeks, doz.	.35@40
Lettuce, crate	.70@90
Mint, doz.	.25@40
Okra, lb.	.12@15
Onions, Green, doz. bunches	.15@20
Parsnips	.25@30
Peas, lb.	.4@6
Oyster Plant	.25@30
Peppers	.6@8
Chili, lb.	.5@6
Radish	.15@20
Rhubarb—	
Crimson Winter	.70@80
Spinach, doz.	.20@25
Squash—	
Summer, crate	.35
Crookneck	.25@35
Turnips	.30@35
Tomatoes, lug	.35@50

FRESH FRUIT

Wholesale selling price:

Apples,	
Astrachan, box	1.60
Gravensteins	1.50@1.90
Apricots, lug	1.35@1.50
Berries—	
Strawberries, basket	.3@4
Raspberries	.4@6
Blackberries	.3@5
Loganberries	.5@6
Crabapples, lug	.90@1.15
Grapes—	
Malagas, crate	1.00@1.25
Black, lug	1.00@1.25
Bananas	.3½@4
Cantaloupes, crate—	
Locals	2.00@2.25
ies	1.95@2.10
as, lb.	1¼@1¾
1-layer box	.60@70
ines, lug	.90@1.20
ples, lb.	.5@6
Pears, Bartlett, box	1.50@1.75
Peaches, lug	.50@75
Plums, lug	.50@1.00
Tragedy	1.25@1.35
Watermelons, lb.	1¼@1¾

CITRUS FRUIT

Wholesale selling price:

Lemons	3.25@5.00
Grapefruit, Seedless	2.50@2.75
Valencias	1.65@2.50
Limes, basket	1.25

DRIED FRUITS

Wholesale prices to retailers are:

Evaporated Apples, Fcy., lb. bxs	.10@12
Apricots	.15@18½
Peaches	.6½@7½
Pears	.8@12
Nectarines	.12½
Prunes	.6@17
Plums	.10

NUTS

Prices named by California Walnut Growers' Association are:

No. 1	.17½
Budded Walnuts	.21
No. 1 Soft Shell Walnuts	.16
No. 1 Hard Shell Walnuts	.15½
No. Twos	.11½

Wholesale price:

Almonds—	
I X L	.22@23
N P U	.20@21
Drakes, Thin Shells	.18@19
Pecans	.16
Peanuts—	
California, Raw	.5⅛@6
Japan	.6@6⅛
Eastern	.7
Pine Nuts	.15@16
Rice Corn	5.00@5.25

HONEY

Wholesale selling price:

Comb, Fancy, Water White	.15
White	.13
Light Amber	.11@12
Extr. Water White	.8
White	.7½
Light Amber	.7
Beeswax	.35

BEANS

Wholesale selling price:

Producer's price not far from one dollar under these quotations:

Limas	7.00
Lady Washington	4.60@4.75
Black Eyes	7.00
Pinks	4.65@4.75
Lentils	6.00@6.25
Small White	6.00@6.25
Garbanzos	8.00

RICE

California	3.50@4.75
Broken	3.00@3.75

HAY

Buying prices f. o. b. cars Los Angeles:

Barley	10.00@11.00
Wheat Hay	10.00@11.00
Tame Oat	11.00@13.00
Alfalfa	9.00@11.00

GRAIN

Wholesale selling prices f. o. b. Los Angeles:

Wheat	1.85
Corn	2.15
Oats, Red	2.35
Oats, White	1.60
Kaffir Corn	1.90
Millet	3.75
Popcorn	4.75@5.00
Egyptian Corn	2.20
Barley Seed	1.45
Milo Maize	2.00
Cal. Seed Oats	2.25
Sunflower Seed	5.25@5.35

FEED STUFF

Wholesale selling prices f. o. b. Los Angeles:

Bran, Heavy	1.70
Alfalfa Meal	1.05
Alfalfa Syrup, per cwt.	1.05
Beef Scraps	3.00@3.10
Beet Pulp	1.25
Cracked Corn	2.20
Feed Meal, cwt.	2.25
Cotton Seed Meal	1.85
Blood Meal	3.60@3.70
Bone Meal	2.00@2.10
Charcoal	1.90@2.00
Bone Green	1.95@2.05
Cracked Wheat	2.00
Oil Cake Meal	2.05
Fish Meal	3.15@3.25
Rolled Oats	1.65
Rolled Barley	1.20
Middlings	1.95

OH, NEVER MIND

Mrs. Schoppen—Blackberry jam, 30 cents a jar! My, isn't that jam jear?"

Mr. Sands—Isn't it what?

Mrs. Schoppen—I say, isn't that dam jear—er—I mean, isn't that dam dear. Oh, never mind!"

San Francisco Market

SAN FRANCISCO, July 21, 1914.

BUTTER

Butter fell off a shade on Monday. General condition fair.

Extras	.25
Prime Firsts	.23½
Firsts	.23
Seconds	.22½

CHEESE

California Y, American	.13½@14
California Flats	.10@13½
Oregon Twins	.15½
Oregon Y, America	.16
Cheddar	.20

EGGS AND POULTRY

Egg market very firm with higher quotations. Receipts sometimes above 2000 cases daily.

Extras	.28½
Firsts	.25½
Select Pullets	.24½
Hens	.17@18
Fryers	.20@22
Roosters, old	.12@13
Roosters, young	.23@25
Broilers	.18@20
Ducks, doz.	6.00
Squabs	1.50@2.00
Belgian Hares, lb.	.13@14

LIVE STOCK

San Francisco prices, gross weight:

Steers	.4@7¼
Cows and Heifers	.3@6¼
Calves, lb., live weight	.7@9
Hogs	.7¾@8¾
Wethers	.5½@5¾
Ewes	.4¼@5
Milk Lambs	.6½@7½

POTATOES

Delta Burbanks	.90@1.25
Oregon Burbanks	.75@1.25
Washington	.60@70
New Potatoes, lb.	1¼@1¾
Sweets, lb.	.5@6

ONIONS

Bermudas, crate	2.00@2.25
New Reds, cwt.	2.00@2.25
Garlic, New	.5@8

VEGETABLES

Wholesale selling price:

Beans—	
Limas, lb.	.4@5
Wax, lb.	.2½@4
Strings	.2½@4
Cabbage, cwt.	1.00@1.25
Carrots, sack	.35@50
Cauliflower, doz.	.40@70
Corn, Green, sack	.75@1.25
Cucumbers, lug	.75@1.00
Deltas, lugs	.75@1.00
Egg plant, lug	1.00@1.15
Peas, lb.	.2½@5
Peppers—	
Bell, lug	.75@85
Chili, lug	1.00@1.25
Rhubarb, box	.60@1.00
Tomatoes—	
Southern, crate	.40@60
Delta, lug	.70@1.00

FRESH FRUIT

Apples—	
Alexander	.50@1.00
Red Astrachan, box	.50@90
White Astrachan	.50@1.00
Gravensteins	.50@1.25
Apricots, crate	.50@75
Small, lugs	.50@75
Blackberries, chest	2.00@3.00
Bananas, Hawaiian, bunch	1.25@1.75
Cantaloupes, crate	1.00@1.25
Ponies	.75@1.00
Northern	1.50@1.75
Ponies	1.00@1.25
Crabapples	.50@1.00
Figs—	
Black, box, single layer	.75@90
Black, double layer	1.50@1.75
White, box, single layer	.50
Grapes, lug	1.25
Nectarines, crate	.50@75
Peaches, crate	.25@40
Lugs	.65@80
Plums, crate	.25@40
Pears, box	.50@1.75
Prunes, crate	.60@1.00
Pineapples, Hawaiian	1.50@2.25
Strawberries, chest	2.00@4.00
Raspberries	5.30@7.00
Watermelons, doz.	1.25@2.00

CITRUS FRUIT

Grapefruit, Seedless	1.00@2.50
Lemons	2.75@5.50
Lemonettes	2.50@3.00
Limes, cs.	4.00@5.50
Tangerines	.75@1.25
Valencias	1.75@2.50
Mediterranean Sweets	1.00@1.50

DRIED FRUITS

Wholesale prices are:

Prunes—1913 crop, bulk basis: 30s-40s, 7½c, 40-50s, 7½c; 50-60s, 7 1-2c; 60-70s, 7½c; 70-80s, 7c; 80-90s, 5¾c; 90-100s, 5½c. The above are for both Santa Clara and outside; 1912 crop worth practically as much as the new crop; 20-30s, 15c in 25-lb. boxes.

Other Fruits. 50-lb. Boxes—	Standard	Ch.	Extra Ch.	Fcy.
Evap. Apples	....	10	10½c	11½c
Peaches	4¾c	5 c	5⅝c	5¾c
Pears	8½c	9 c	10 c	.....

RAISINS

The following prices are f. o. b. Fresno, as given out by the Associated Raisin Company, and are effective on all sales until August 1, 1914. 1912 crop practically the same figures as the new crop. 1913 crop, per lb., effective at once: Loose Muscatels (50s), 1-crown, 4¾c; 2-crown, 5½c; 3-crown, 6c; 4-crown, 6c; Seeded, fancy, 16-oz. pkgs., 7½c; do, 12-oz., 6c; do, bulk, 6¾c; do, choice, 16-oz., 7c, do, 12-oz., 5¾c; do, bulk, 6½c; Sultanas, no stock; Thompson Seedless, unbleached, 50s, 6c; 16-oz., 7⅛c; 12-oz., 5&c; recleaned, ¼c advance; do, floated, ⅛c advance; London Layers, no stock. Local representatives of the Association are asking ¼c higher, while several of the large packers are quoting ⅛c under the Association's figures.

The California Associated Raisin company has issued a price list dated May 28th, on the 1914 crop.

3 Crown London Layers, 20 lb. box, $1.15. 4 Crown Cluster, $1.40. 5 Crown Dehesa Clusters, $2.00. 6 Crown Imperial Clusters, $2.50. 5-lb. boxes, 50c extra; 10-lb. boxes, 25c additional. Fancy Clusters, 1-lb. cartons, 20 to the box, $1.65. Fancy Clusters, 2-lb. cartons, 12 to the box, $2. Fancy Clusters, 5-lb. cardboard cartons, 4 to the box, $2.25. Bulk Layers in 50-lb. cases, $2.50. All prices guaranteed against decline to January 1, 1915, and subject to advance without notice."

NUTS

Peanuts—	
Unpolished	.5½@6
Polished	.6@6½
Japanese, Shelled	.6¼@6¾
Italian Chestnuts	.6½@7

BEANS

Wholesale selling price:

Limas	6.75@6.85
Pink	4.10@4.20
Black Eyes	7.00@7.25
Cranberry	5.75@6.00
Small White	4.85@5.70
Garbanzos	6.50@7.50
Large White	4.25@4.40
Bayou	4.50@4.75
Manchurian Cranberries	3.75@3.90
Manchurian Butters	4.60@4.80
Manchurian Speckled Bayous	3.75@4.00
Red Mexican	6.00@6.35
Horse Beans	2.00@2.25

HONEY

1913

Comb, Water White	.14@15
Amber	.12@15
Dark	.10@11
Extracted White	.7½@8
Light Amber	.6½
Dark	.3½@4
Beeswax	.27@32

HOPS

1913

Sacramento Valley	.15@16
Sonoma-Mendocino	.17@17½
Oregon Clusters	.16@17
1914 Contracts	.14@15½

HAY

Under date of July 18, Scott, Magner & Miller say:

Arrivals of hay during the week just past were 2769 tons, about the same quantity as has been coming in for the last few weeks. The consumers are buying very sparingly and only what they require for immediate use. The majority of wheat hay is coming from Contra Costa County. It is of a good grade of coarse, good colored hay, and has been selling here in San Francisco in carload lots from $10.00 to $11.00 per ton. The market on alfalfa is unchanged.

Fancy Wheat Hay, lt. bales	11.00@12.00
No. 1 Wheat or Wheat and Oat	9.00@10.00
No. 2 Wheat or Wheat and Oat	7.00@8.50
Choice Tame Oat	10.00@11.00
Other Tame Oat	7.00@9.00
Barley	6.00@8.00
Wild Oat	6.00@8.00
Alfalfa	6.00@9.00
Stock Hay	4.50@5.00
Straw, new	.40@45

GRAIN

Wheat, Cal. Club	1.57½
Corn, Eastern Yellow, blk	1.70@171¼
Egyptian, White Corn	1.70@1.72½
Barley, Feed	.97½@1.00
Oats, white	122½@1.27½
Oats, red	1.05@1.15
Millet	2¼@2½
Flaxseed, lb.	4@4½
Mustard, Brown	4@4¼
Rye	1.50@1.55
Sunflower	.4@4½
Vetch Seed	.3@3½

FEED STUFF

Alfalfa Meal, car lots	11.50@12.50

WEATHER CONDITIONS

San Francisco, Cal., July 11, 1914.

Report from the various stations of the U. S. Weather Bureau, by Geo. H. Wilson, director, San Francisco.

	Rainfall Data.			Temperature Data.	
	Past Week.	Seasonal to Date.	Normal to Date.	Maximum.	Minimum.
Eureka	.00	.01	.11	62	50
Red Bluff	.00	.00	.00	104	58
Sacramento	.00	.00	.00	102	54
San Francsco	.00	.02	.01	74	52
San Jose	.00	.00	.00	92	50
Fresno	T	T	.00	102	58
Independence	.00	.00	.00	94	56
San Luis Obispo	.00	.00	.01	80	52
Los Angeles	.01	.01	.00	76	56
San Diego	.00	.00	.00	70	60

T means trace.

Bran, ton	25.50@26.50
Feed Cornmeal, ton	41.00@41.50
Cracked Corn	41.00@41.50
Rolled Barley, ton	21.50@22.00
Rolled Oats, ton	37.00@37.50
Middlings	32.00@33.00
Shorts	27.00@28.00
Oilcake Meal	32.00@33.50
Cocoanut Meal	25.00@25.50
Linseed Oilcake Meal	27.00@28.00

Citrus Fruit Market

LOS ANGELES, July 22, 1914.

Greatly reduced shipments enable the market to clean up holdover for several weeks, and a much firmer condition now prevails. Shipments, however, have been increased and are again back close to the 100 per day mark, and it is presumed that during the next week rather a weakened condition will return. The fruit is excellent and carrying exceptionally well.

There are 330,000 boxes of foreign lemons afloat. The average for five years at this date has been 172,000 boxes. This is causing a serious slump along all Atlantic coast points. California's are making no effort to go farther east than Chicago. The hot weather of the middle west has caused very heavy consumption, and all California offerings are quickly picked up and at satisfactory prices. The foreigns are proving poorer keepers and some sales have been made as low as $1.30.

Shipments.

Shipments of oranges to date from Southern California since November 1, 1913, 32,722 cars; lemons, 2,333; total, 35,055. To same date last season: oranges, 12,212 cars; lemons, 1,848; total, 14,060. Total of citrus fruits two years ago this date, 31,660. Tulare County shipments practically ended. Totals for year, together with those of Butte County, will be given later.

NEW YORK, July 20.—Twenty-six cars Valencias sold. Market is strong and higher on strictly fancy stock, lower in spots on other grades.

VALENCIAS—	Avge.
DeLuxe	$4.55
DeLuxe, Fy	3.45
Outlook	3.15
Royal Elephant, Elep, Orch	3.50
Gold Elephant, Elep. Orch	3.15
Gray Elephant, Elep. Orch	2.90
Gold Medal, G. O. Groves, inc	3.25
Silver Medal, G. O. Groves, Inc	3.00
Medal, G. O. Groves, Inc	2.80
Perfection, Highgrove, O. G. A.	3.20
Golden Rod, Highgrove	2.60
Hawarden, Hawarden C. A.	2.65
Arch, Hawarden	2.45
Golden Flower, C. M., Brown	2.45
Golden Fruit, C. M., Brown	2.35
Gabriella, Ind. F. Co.	2.80
Diamond, T. Tyler Grove	2.85
Gilt Edge, Fy., Tyler Grove	2.50
Gilt Edge, Ch., Tyler Grove	2.00
Golden Orchard, Ind. F. Co.	2.90
Freedom, Ind. F. Co.	2.70
E. Highland, E. High., C. A. (imp)	2.55
Symbol, Stewart F. Co.	2.15
Old Mission, Xf., Chapman	3.95
Old Mission, Fy., Chapman	3.25
Golden Eagle, Sd., Chapman	2.80
Orchard, National O. Co.	3.05
Standard, National O. Co.	2.70
Aurora, Amer. F. Dis.	3.30
Sappho	2.95
Blue Hussar, O. K. Ex.	3.00
Green Hussar, O. K. Ex.	2.65
Alta Loma, O. K. Ex.	2.20
Glendora, Alps. A. C. G. Ex.	3.70
Glendora Home, A. C. G. Ex.	2.90
Pet, Sd., San Dimas	2.95
El Capitan, San Dimas	2.70
Athlete, S. A. Ex.	3.00
Fort Pitt, A. C. G., C. Oak	2.85
Old Mill, A. C. G., C. Oak	2.60
VALENCIAS—	Avge.
Arroyo, S. T., Pasadena	$3.20
Lochinvar, R. H., E. High.	3.25
Canyon, A. C. G., L. Park	3.25
Burro, S. T., Pico	3.00

CINCINNATI, July 20.—Warm. Market is advancing. Two cars Valencias sold.

VALENCIAS—	Avge.
Colombo, S. T., Fullerton	$3.05
El Camino, S. A., Claremont	2.90
Basket Ball, S. A., Clarement	2.65
Las Palmas, S. T., Fullerton	2.80
Real, S. A., Claremont	2.85

BOSTON, July 20.—Six cars oranges, one car lemons sold. Clear and cool. Market is very strong.

VALENCIAS—	Avge.
Athlete, S. A., Claremont	$3.40
Rey, S. T., Fernando	3.45
Glendora Alps, A. C. G., Glendora	3.90
Hunter, A. C. G., Glendora	2.50
Canyon Red, A. C. G., Glendora	2.75
Mother Colony, S. T., Anaheim	3.25
Tunnel, S. T., Fernando	2.95
Trail, A. C. G., Glendora	3.15
Lilac, Randolph F.	2.75
LEMONS—	
Lemon Heights	3.40
Hillcrest, O. R., Tustin	3.05
SWEETS—	
Brownie	2.50

PITTSBURGH, July 20.—Six cars oranges sold. Weather cool. Market is steady.

VALENCIAS—	Avge.
Brownie, Rialto F. Co.	$3.00
Cornell, S. A., Walnut	3.05
EEE, S. T., Leffingwell	3.20
Colombo, S. T., Placentia	3.15
Violet, D. M., Monrovia	3.55
Naralimo, Sparr F. Co.	3.20
Green and Gold, S. A., Walnut	2.80
Plain Label, S. T., Placentia	3.00
Jasmine, D. M., Monrovia	3.30
BLOODS—	
Naralimo	2.40
Circus	2.25
GRAPEFRUIT—	
Circus	1.00
Colombo	1.05
VALENCIAS—	Avge.
Gold Buckle, R. H., E. High	$3.05
Rooster, Or., McPherson	3.20
Searchlight, Or. Ex.	2.70
Paul Neyron, S. A. Ex.	2.85
Sunnnyheights, R. H., Redlands	2.00
Parrot, S. A. Ex.	2.85
Pet, S. D. Ex.	3.05
Stork, S. A. Ex.	2.90
Searchlight, Or. Ex.	2.65
Hobo. A. H. Ex.	2.50
GRAPEFRUIT—	
Orchard	2.75
HALVES—	
Orchard	1.90
VALENCIAS—HALVES—	
Perfection	1.35

ST. LOUIS, July 20.—Clear and warm. Market is steady. Six cars oranges, one car lemons sold.

VALENCIAS—	Avge.
Lochinvar, R. H. E., E. High	$2.75
Brownie, Rialto F. Co.	2.35
Bouquet, Randolph F. Co.	2.60
Green Crown, A. C. G., Azusa	2.90
Rialto, Rialto F. Co.	2.35
Wildflower, Randolph F. Co.	1.70
LEMONS—	
Maduro, Q. C., Corona	4.20
Grove	4.15
HOMOSASSAS—	
Silver Bell	2.10

PHILADELPHIA, July 20.—Six cars sold. Market is steady.

VALENCIAS—	
El Capitan, S. D., San Dimas	$2.75
Fort Pitt, A. C. G., C. Oak	2.95
Pico, S. T., Whittier	2.75
Majesty, O. K., Upland	2.55
Lilac, Randolph F. Co.	2.75
Duquesne, A. C. G., C. Oak	3.15
Old Mill, A. C. G., C. Oak	2.80
Apex, O. K., Upland	3.00

CLEVELAND, July 20.—Four cars Valencias sold. Market is advancing. Warm and clear.

VALENCIAS—	Avge.
Echo, S. T., Pasadena	$3.35
Gold Buckle, R. H., E. High	3.35
Trail, A. C. G., Lamanda Park	3.25
Arcadia, S. T., Pico	3.05

THE SUGAR BEET HARVEST

(Continued from Page 81.)

pious moisture to the plateau lands on which the best fields are.

There is doubt and speculation as to what the factories will do after this season. Will the beet sugar factories so favorably located as are those of Southern California continue to operate notwithstanding the free clause of the tariff act which becomes operative next year? In the face of the bright crop prospect this year, it would be hard to believe that such course is not to be.

SUPERIOR KNOWLEDGE

The priest had preached a fine sermon on "Married Life and Its Duties." Two old Irish women were heard coming out of church commenting on the address.

"It's a fine sermon his reverence would be after giving us," said one to the other.

"It is, indeed," was the quick reply, "and I wish I knew as little about the matter as he does."

MORNING MUSING

"Scrape! Scrape! Scrape!
Each morning I have to shave,
And then with a tonic to coax the hair
The top of my head I lave.
And this is the song I spin
While giving the blade a shove;
Why can't I be bald upon the chin
And have whiskers that grow above?
—Boston Globe.

WE ALL LIKE IT STILL

An "Old Oaken Bucket" sort of poet concludes a bit of verse "An' so I love the old piano still." We all like it still. People with old pianos should make a note of this.

BRUTE

"Do you like my complexion?" she asked.

"No," he replied absently, "rub it out and do it over."

Figg—Does your grocer sell his apples by the barrel?

Fogg—Well, they come in barrels, but what he sells them by is the top layer.

Marketing!!

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It matters little whether you have to sell a carload of cornfed steers, or a bushel of onions, the problem is before you. And you must meet it. Here's a concrete illustration:

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"When the farmers of Kansas are feeding Elberta peaches to their swine, rather than to haul them to a 15-cent market, the housewives of Chicago and the great Northwest are paying one dollar a peck, $3.50 a bushel, for the fruit."—A news item.

This absorbing problem was threshed out to exhaustion in the Great National Conference on "MARKETING and FARM CREDITS," held in Chicago in 1913. The ablest men in the World participated in the deliberations and discussions.

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J. D. Clark, J. E. Benton, Charles Tolle, O. T. Gallatin, D. M. Kirkland and Mrs. Hilda Fleming of Holtville, Imperial Valley, who came to "look over" the lands of Milford Valley, Utah, July 4th. They bought from 40 to 160 acres each.

—they **CAME** from Holtville, Imperial Valley's richest section—they **SAW** with their own eyes the fertile-productive lands of Milford Valley—and every one of them **BOUGHT** from 40 to 160 acres on the spot.

Can you ask for a more smashing argument? Six experienced, successful, well-to-do ranchers from the richest district of Imperial Valley **buy 40 to 160 acres of Milford Valley lands on sight.**

These people made good in Imperial Valley—they made money. They know a good land buy when they see it. They are solid, practical, experienced. In judging land, they don't ask for opinions and promises—**they have to be shown.** When people of this type **buy**—they don't guess, they **know** what they're getting.

They had read the advertisements of the New Milford Valley irrigation project—they thought these ads were "just ads" and they took them "with a grain of salt"—but they decided to run up and look things over at any rate. Six firm signatures on six crisp checks was their endorsement.

$30 An Acre

Adjoining Live Town of Milford, Utah, on Main Line of Salt Lake Railroad

The soil in Milford Valley is rich and loamy—soil at $30 an acre that produces bigger and better alfalfa crops than Imperial Valley; brings $200 an acre from potatoes the first year (400 to 600 bushels is the usual yield, netting $200 to $300 per acre). This section is famous for its bumper crops of apples, plums, cherries, wheat, oats, celery, asparagus, sugar beets, onions and garden truck. Fortunes in dairying and hog raising.

Water should not cost more than 30 cents per acre per year—perpetual water right, $70 per share, 12 years' time to pay for it if you wish. Delicious, pure, soft drinking water. Exhilarating mountain air—elevation 4971 feet.

If you are in a position to demand the **best in the west**—Milford is your opportunity. This land should be worth close to $300 an acre or more when in alfalfa. Establish your son in Milford Valley. It will be the making of him. Write **today** for our illustrated booklet. Delay may mean disappointment to you.

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There is gasoline and gasoline. There's the mixed kind you have to use two gallons of to get one gallon's worth of power—and then there's

RED CROWN

the Gasoline of Quality

Red Crown is what you want. Even though you have to pay a little more ***per gallon*** you'll find it lots cheaper ***per mile.***

Red Crown signs are furnished all dealers selling this gasoline. Watch for the sign or ask our nearest agency about delivery in bulk.

Standard Oil Company
(California)

The Schmeiser Giant Engine Scraper

"Moves the Earth in Chunks"

Cost of Leveling Cut

With Schmeiser Machines it is now possible to prepare land for rice and alfalfa at a reasonable figure.

Write Us Now

Say how much land you have to level and check and what kind of land it is. **We have a machine for your work.**

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SEMPERVIRENS CACTUS FARM
JOHN ZUUR, Proprietor
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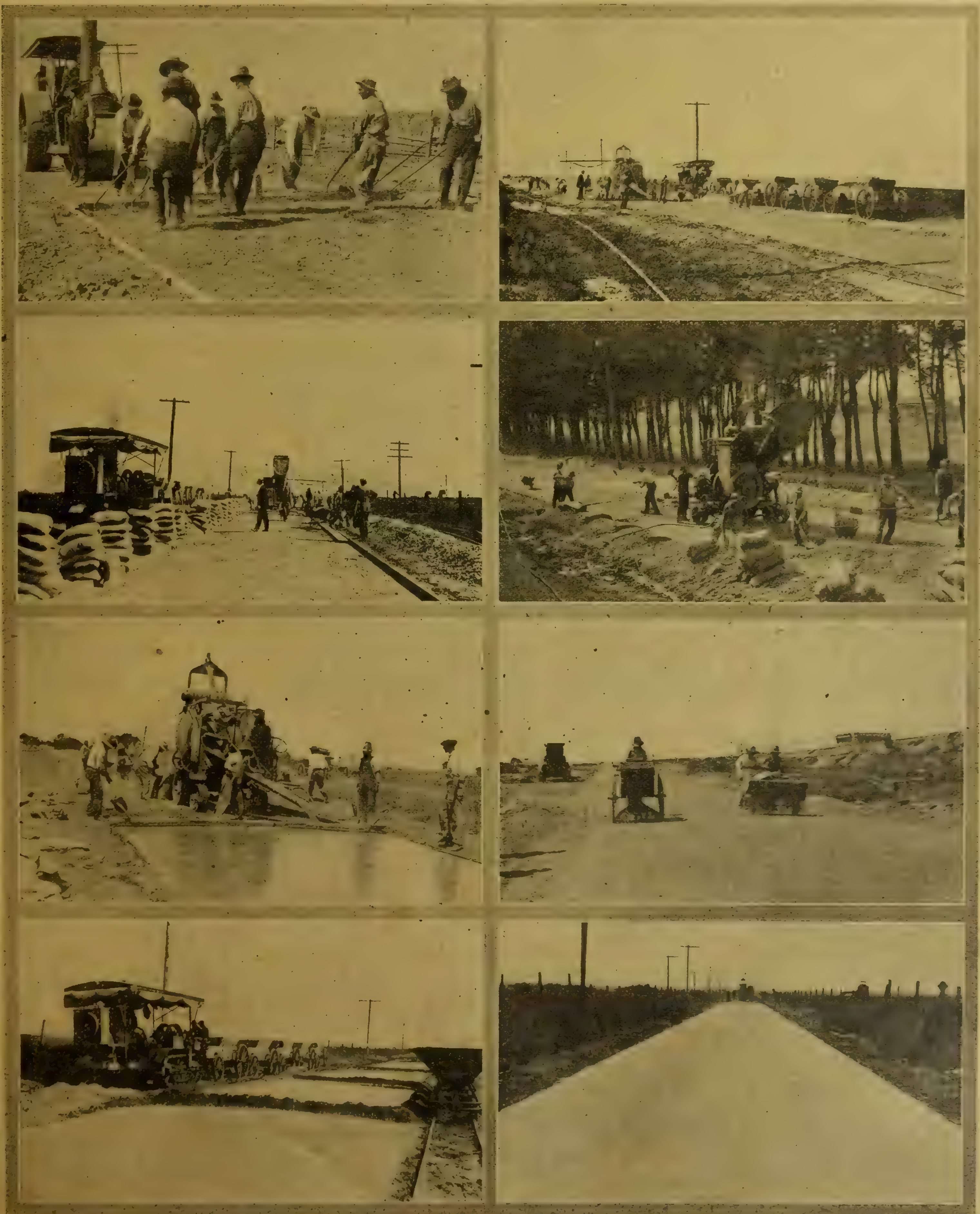
An Illustrated Weekly Magazine, Devoted to the Rural Home and Ranch

LOS ANGELES July 30, 1914 SAN FRANCISCO

Improved Methods of Road Construction in California



CITRUS TREES FUMIGATED

with

HYDROCYANIC ACID GAS

produce

GOOD, CLEAN, SOUND FRUIT in much GREATER ABUNDANCE than do UNFUMIGATED TREES

Use

Improved Form
of
PURE (129%) SODIUM CYANIDE

It is in 1-oz. pieces.
It prevents waste.
It generates uniformly.
It saves money.
It is free from "Fines."
It is convenient to use.
It does clean work.
It saves time.

Because it generates evenly, little or no SULPHURIC ACID is carried out of the generator with the Hydrocyanic Acid Gas. Result—the practical elimination of burning and pitting of fruit.

The life of tents will be materially prolonged with the use of this material.

Practical field experiments have demonstrated its merits.

"Cyanegg" is the ideal material for use in the generation of Hydrocyanic Acid Gas, for fumigation operations.

F. W. BRAUN
Los Angeles
AGENT
THE ROESSLER & HASSLACHER CHEMICAL CO.

What a few prominently successful citrus fruit growers think of fumigation with hydrocyanic acid gas:

Mr. O. B. Griffin, assistant manager Leffingwell ranch, Whittier, Cal.:

"The fumigation of citrus trees is a profitable investment for the citrus fruit grower, and properly done will bring large returns."

Mr. McGill, manager McNally ranch, La Mirada:

"Correct and proper fumigation is the keystone in the structure of the citrus fruit industry. Without it there could be no profitable growing of citrus fruit."

Judge Erskine M. Ross, Los Angeles, Cal.:

"I have your letter of this date asking for a brief statement of my experience in respect to the advisability of fumigating citrus trees. As I have been a grower of such fruit for many years, I ought to know something not only of the advisability, but the absolute necessity of fumigation in localities where one's trees are subject to scale. I know from experience that a good crop of merchantable fruit cannot be produced on the same trees that produce a good crop of scale of any kind. I have, among other orchards, a good Valencia orchard of a fine quality of fruit. My failure to fumigate it three years ago caused me practically the loss of the crop of that orchard for two years; the income from which either year would have paid the cost of fumigation many times over. I did not fumigate it that year because those who examined it for the purpose, including myself, thought that it would go through that season without any substantial harm, without fumigation; but the scale multiplied so rapidly and so unexpectedly as to bring about the result above indicated."

Mr. Hemphill, manager for C. C. Chapman, Fullerton, Cal.:

"Correct fumigation spells clean trees, more and better fruit, highest prices in the market, and larger returns for the grower."

Mr. W. C. Hendricks, manager, Azusa Citrus Association, Azusa, Cal.:

"The cost of fumigating citrus trees should not be considered as a part of the expense account in the handling of a citrus grove, but rather as an investment that brings speedy and large returns on the money paid out."

Corona Lemon Co., Corona, Cal.:

"Replying to your inquiry, I did not suppose any California Citrus Grower in this day and age would doubt the absolute necessity of fumigation for scale. Any man who has scale and cannot fumigate should sell out as soon as possible, for there is no place for him in the business."

W. H. Jameson, Corona, Cal.:

"In reply to your favor of the 18th we have to say that we are strong believers in fumigation with Cyanide, as we consider it the most practical way to control the scale pest that has as yet been discovered.

"Whenever scale begins to make its appearance in orange or lemon trees here the grade of the fruit is lowered and if the scale is not cleaned up the trees begin to show the effects and the yield will surely be materially affected."

Mr. Pease, Horticultural Commissioner of San Bernardino, has knowledge of trees producing from four to six times more oranges and better fruit the first year following fumigation than they produced before fumigation.

Fumigators' Supplies

Rubber Gloves
Rubber Tubing
Tubing Clamps
Leakage Gauges
Cyanide Scales
Frost Predictors
Magnifying Glasses
Fumers
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363-371 NEW HIGH STREET — **THE BRAUN CORPORATION** — **LOS ANGELES**

California Cultivator
Rural Californian combined with California Cultivator
Vol. XLIII No. 5 LOS ANGELES: THURSDAY, JULY 30, 1914 One Dollar Yearly

Another Pest of the Citrus Industry

The "Gray" Scale is the Latest to be Added to our "Color Scale" of Pests of Orchard Trees. Tulare County Making a Strong Fight to Eradicate the Pest from Her Orchards

Every new fruit country has a material advantage over older producing sections in one point at least, and that is its immunity from insect pests. This immunity is temporary, and all fruit districts recognize this. Of course, for boosting purposes it is often said that "our section is permanently immune because of our climatic conditions," or this or the other "favorable circumstance," but sooner or later we all enter the fight, and every year shows an increase in the number of the fruit growers' enemies.

It was my privilege to see the beginning of what will be a great and I believe a successful fight against a comparatively new pest in the state. This time it is in Tulare County, a section remarkably favored and a section in which the fumigation tent is practically unknown. At first when the "False Brown" scale, the "Long" scale, the "Gray" scale, or, more correctly and scientifically, Coccus citricola, was disovered there was a slight disposition to convey the idea that it would not be able to live under Tulare County conditions, but now growers are looking squarely in the face of the fact that the pest is with them to stay. They frankly admit it, but add quickly, "We will clean up our orchards and show our ability to control the conditions." To that end County Horticultural Commissioner Charles P. Collins of Tulare has drawn upon one of the careful investigators of the southland, and Mr. R. P. Cundiff, formerly horticultural commissioner of Riverside County, has gone into the field to aid. In addition, a corps of energetic inspectors has been appointed. There are 11 of them and they have made inspection of the citrus orchards of the county. Before their search it was assumed there might be 700 or 800 acres of the lands of Tulare County infested. It is now stated that there are more than 15,000 acres infested, to a greater or less degree.

But what is Coccus citricola? It is not exactly like the Soft Brown scale, but near enough to it in appearance so that it was at one time thought to be a slightly different form of the soft scale. In the monthly bulletin of the state horticultural commission of August, 1913, Mr. Kell wrote:

Mr. Cundiff Showing to Commissioner Collins Twig of Orange Tree So Badly Infested That More Than Half of It Has Been Killed By Coccus Citricola.

"This scale is somewhat similar to the soft brown scale (Coccus hesperidum), but is grayer, less shiny and the young are more transparent and lie flatter to the leaf, appearing to adhere closely to it as a mere film. The ants do not foster it to the same extent as they do Coccus hesperidum.

"The scale is practically viviparous, though eggs can occasionally be found along with the live young under the old shells. The hatch appears to be fairly regular, extending from about May 1st to August 21st, in the two years I have had it under observation. Mr. Roy Campbell, who is working on the life history of this scale, tells me that he has counted as many as 500 young from one scale.

Discussing the Scale Situation on the Hills Above Lindsay

A Background Within the Sweep of the Eye of Perhaps 15,000 Acres of Citrus Orchards. Reading from Left to Right the Gentlemen are: R. P. Cundiff, Formerly of Riverside, Giving Expert Advice to Tulare County Horticultural Commissioner Collins (Center) and Inspector Hershey of the Lindsay District.

"The adult scales vary much in size, giving the appearance of an uneven hatch, but one finds the quite small ones bringing forth young at the same time as those that are perhaps six times their size. The biggest are larger than the largest soft brown scale.

"Soon after hatching begins the surface of the mother scales becomes dry and light brown in color and begins to adhere less closely to the twig. At this stage they are found almost wholly on the smaller twigs, being arranged in places in an imbricated manner, covering the twig like fish-scales. When the young are all out, the dead shells are very apt to drop off, leaving whitish marks. One does not find many old shells of the preceding year, as is the case with the black scale.

"This scale throws out a great deal of honeydew, the resulting smut making the trees very dirty, but this takes place somewhat later in the season than is the case with the black scale, so that the navel oranges have usually been picked, but the Valencias become much soiled."

Subsequent to this, however, the correct determination was made and the scale received its new name of Coccus citricola. Literature referring to this pest is extremely meager, and where it came from and when it came to California is entirely unknown.

Mr. Geo. P. Weldon, deputy state horticultural commissioner, writes: "Coccus citricola was described on page 222 of the May number of the Entomological News, by Roy E. Campbell of Berkeley. In his article he gives as the distribution of this pest: Pomona, Claremont, Ontario, Cucamonga, Colton, Highlands, Redlands and Riverside, in Southern California; Tulare and Fresno Counties in the lower San Joaquin Valley and slight infestations in Sacramento, Yuba City and Marysville of the Sacramento Valley. I might add to this list Martinez, as a very bad infestation was discovered there on some orange trees. As far as we know this pest has no other host plant besides the citrus trees."

A few months ago, or late in 1913, experiments in fumigation were tried in Tulare County. These showed indifferent success, many thought because the dosage was insufficient. This year the dosage will be materially increased and work is beginning much earlier. In fact, Mr. Collins has ordered for the county 160 tents. This will be sufficient for five outfits. Instead of using "¾A" schedule, chemists have figured a new schedule, copy of which is given on another page. This is 85 per cent of

(Continued on Page 119)

Old Mt. Whitney and Foothills Back of Us, Tulare County Citrus Orchards as Far as the Eye Reaches.

A Pumping Plant on the Ranch of Inspector Hershey Lifting Water for Forty Acres. Nearly all Lindsay Orchards Irrigated by Pumping.

From the Heights Looking Toward Lindsay; 15,000 Acres of Citrus Orchards Will Be Fumigated or Sprayed This Season.

Types and sizes for every need from 4 to 180 horse power.

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You Can Use the Cheapest of Low Grade Fuel to Run the

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Cheap fuel even to 38 gravity "tops" or "toppings" can be used efficiently and burnt cleanly. One-third of a cent per horse power per hour is all it costs to operate a Western when Special Gas Oil at 2¾c per gallon is used.

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Pomona Pumps are used in connection with dug, bored or drilled wells from 8-inch inside diameter up, with capacities of 50 gallons per minute up to 1000 gallons per minute; built for pumping from a depth of 75 feet to and including 500 feet.

Competent Pomona engineers, thoroughly familiar with irrigation problems, are at your disposal to consult with and help you solve your water difficulties.

Call and see us or write for further details. Pump catalog No. 54C will be sent free on request if you state the depth and location of your well.

Pomona Mfg. Co.

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Located in the center of the largest deep well irrigation district in the world.

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proved by actual experience, are produced by NITRATE OF SODA; because Nitrate is always needed in our soils.

Send five cents for postage on free books, and state what crops you are growing.

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When writing advertisers, mention The Cultivator.

Citrus and Tropical Fruits

EFFECTS OF FREEZING UPON CITRUS TREES AND FRUIT

By Carl Nichols.

Frost-Injured Leaves

A frozen leaf may be readily detected by the dark colored, moist appearance before thawing. If the leaf is only partly frozen, by glancing at the under side characteristic dark-colored areas appear, giving to the leaf a mottled appearance. After thawing the injured leaves will turn yellow and curl, appearing to suffer from a lack of water. If only slightly injured they may regain their normal condition and still remain on the tree. Whether such leaves will serve a useful purpose on the tree is doubtful; it appears that their usefulness is lessened for one season at least, and that their lives are possibly shortened.

In Florida after the severe freezes of the season 1894-95, the orange leaves which were severely injured did not fall immediately, but remained attached to the tree about nine days, at which time they were very crisp and dry. After this the dropping was gradual and was mainly caused by the wind. Lemons and citrons were the first to show evidence of the freeze, the leaves withering and turning brown in about two days. The upper leaves were usually the first to fall, while the lower ones frequently remained to some extent. Defoliated trees are in great danger of severe injury from a second cold wave.

Frost-Injured Twigs

The young tender growth may be injured to some extent by cold which is sufficiently intense to defoliate the tree and yet is not severe enough to injure the larger branches. Much depends on the degree of dormancy; twigs if sufficiently dormant will resist considerable cold. As a general rule the resistant power of the twigs also varies directly with the diameter, the smaller twigs being less resistant.

Frost-Injured Trunks

The trunk can stand more cold than any other part of the tree. If severely frozen, however, it is killed to the ground and may often be split open, if the cold is sufficiently intense. As with branches, its resistant power is in direct ratio to the diameter. Often after severe freezing the bark will split, but not the wood. During the freeze of January, 1913, in Southern California this often happened. In such cases it was found that the bark would curl either outward or inward upon drying, or in some cases it would stick tight to the wood. In cases where the loosened bark curls inward, the free portion should be at once removed or more and more of the bark will be loosened as drying continues.

In Florida it was found that the weakest part of the tree, or the part most susceptible to injury by cold, was the point of union between bud and stock. In that region it was found to be of great help to protect this union with a mound of earth. It was also found that a dense mass of foliage, especially on a low-headed tree, was of much importance in protecting the trunk from injury.

Frost-Injured Fruit

It is usually considered that the fruit of all varieties have about the same resistance to cold. When slightly frozen the fruit will have a characteristic dark mottled appearance. When severely frozen, if cut open, it will be found to contain a mass of ice crystals which may be scraped off the cut surface with a knife blade. Usually, inside the fruit in the membranes between the segments and in the membranes of the pulp vesicles, will be found small white crystals of hesperidin. Whenever found in the fruit it is satisfactory evidence that the fruit has been frozen. Upon thawing, the frosted portions of the rind appear light-colored. The rind in some cases is not sufficiently injured to show any change in color, yet its constitution may be changed so as to permit of evaporation of the juice in the pulp. Frozen fruits when thawed out quickly soon become soft and watery, hanging as flabby, misshapen masses upon the limbs. The juice after a time evaporates and nothing is left but a chaffy mass of juice sacks. On the surface the fruit may appear uninjured, yet when cut open the segments will be found to have shrunken, leaving wide spaces between; the fruit as a result becomes light in weight. Severely frozen fruit usually begins to drop in about 12 days, and often the surface of the ground is covered with such.

Frost-injured fruit is often found in which only scattering cells here and there are injured. With such fruit the uninjured cells will often swell and fill the places occupied by the damaged cells, thus resulting in a fruit which is just as good as though it had never been touched by frost.

It has been found that frost-injured fruit can be eaten with no fear of harm resulting. This matter was thoroughly studied by Dr. Webber after the great freeze in Florida. At that time frozen oranges and pomelos were eaten in great quantities and large shipments were made to the northern markets. So far as could be learned no injury whatever resulted from this unprecedented consumption, and any claims made that frozen fruit is unhealthful, are entirely unfounded.

Resistance to Frost

It is noticed that under certain conditions trees are more resistant to freezing than under others. In Florida it was found that trees affected by the white fly or by scale insects suffered to a much greater degree than those free from pests. The insects suck the sap and devitalize the tree, leaving it in a poor condition to withstand cold. The same holds true when the tree is diseased from any cause, whether the disease is due to some fungus organism or is the result of physiological trouble.

The condition of trees which lack a proper food supply is in many ways similar to those which are suffering from disease. Trees which are in healthy, vigorous condition and have well developed, dark green foliage, are much better able to resist cold temperatures. But one should be very careful not to overstimulate the trees, as then the trees would produce a large amount of sappy, immature wood which would be very susceptible to injury. This applies especially to

DISTANCE AROUND, IN FEET.

DISTANCE OVER, IN FEET.

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DOSAGE SCHEDULE 85 % A, FOR HIGH GRADE SODIUM CYANIDE (IN OUNCES).

THE ABOVE SCHEDULE IS FOR 129% SODIUM CYANIDE, AND IS CALCULATED ON THE BASIS OF ONE OUNCE OF 98-99% POTASSIUM CYANIDE TO THE 100 CUBIC FEET.

Modified Schedule Used in Fumigating Soft Gray Scale

Fearing Unsatisfactory Work With "¾ A" Schedule Fumigators Now Working In Tulare County Will Use the Following 85 Per Cent A. It Has Been Tested and Thoroughly Efficient Work Secured By Its Use.

nitrogenous fertilizers which when applied in large quantities are almost certain to produce excessive woody growth Nevertheless one should see that the soil contains an adequate amount of the fertilizing element.

Much has been said about the use of potash fertilizers as a protection against frost. It appears that liberal amounts of potash have a decided effect on hardening and maturing new growth, and various observations are reported which show that crops and fruits fertilized with potash salts are more resistant to frost than ones not so treated. In one test two varieties of grapes were grown in a series of fertilizer plats, part being supplied with potash salts and the rest having no additional potash applied. During severe frosts those growing in plats which were fertilized with the potash were much less injured. Analyses showed that these shoots had a lower water content and a higher percentage of dry matter and ash than shoots from unfertilized vines. The higher resistance where potash is supplied is thought to be due to a greater concentration of the cell sap.

Similar results have apparently obtained with sodium nitrate as the fertilizer. But as noted above great care must be used not to supply an excess of this substance or of any other nitrogenous fertilizer.

The degree of dormancy is one of the most important factors relating to the resistance of citrus trees to frost. Citrus trees are not distincly periodic in growh. They respond readily to short periods of warm weather which cause the sap to commence to flow and the buds to swell. In this condition they may be severely injured by temperatures but little below the freezing point. When perfectly dormant the trees will stand a considerable degree of cold. For instance, in the citrus regions of the great central valleys, especially in the northern citrus regions of California, the trees are in such a dormant condition during the winter that they are seldom if ever severely injured by the lowest temperatures which have been known to occur. Again in Italy, citrus tres, because of their dormant condition, are fairly resistant to cold, provided the temperature falls only a few degrees below freezing, and for this reason Italian citrus growers take no measures to protect their trees, except on a small scale by covering with mats, etc. Going from Rome toward the north, citrus trees are not infrequently seen covered with snow for some hours, or even a few days; yet they suffer no injury, except in the case of Mandarins, which are the least resistant varieties. On the 18th of February, 1913, a heavy snow fell in Rome and in many other parts of Italy, with but little damage reported to citrus trees or fruits.

RELATIVE IMPORTANCE OF FRUIT CROPS

Following is a review of interesting facts gleaned from the last U. S. Census by Mr. C. S. Milliken. It was given before the recent meeting at the Citrus Experiment Station at Riverside of an informal association of all the men working upon the problems of scientific agriculture in Southern California, employed by the federal department of agriculture, the University of California and the state commision of horticulture. Once a month the members meet to discuss the work in their respective fields and current literature bearing upon agriculture and the allied sciences.

The Relative Importance of Fruit Crops.

A little browsing in the thirteenth census of the United States reveals some facts regarding the fruit crops of California, especially her citrus crop, which may be of general interest.

The following table shows the relative value of the principal crops of the United States in 1909; the citrus crop ranking 14:

Table No. 1

Value of crops if the United States, 1909:

1.	Corn	$1,438,553,919
2.	Cotton and cottonseed	824,696 287
3.	Hay and forage	824,004,877
4.	Wheat	657,656,801
5.	Oats	414,697,422
6.	Potatoes	166,423,910
7.	Tobacco	104,302,856
8.	Barley	92,458,571
9.	Apples	83,231,492
10.	Sweet potatoes and yams	35,429,176
11.	Flaxseed	28,907,554
12.	Peaches and nectarines	28,781,078
13.	Sugar cane	26,415,952
14.	Citrus	22,620.812
15.	Grapes	22,027,961
16.	Edible beans	21,771,482
17.	Rye	20,421,812
18.	Sugar beets	19,880,724
19.	Peanuts	18,271,929
20.	Strawberries	17,913.926
21.	Rough rice	16,019,607
22.	Dry peas	10,963,739
23.	Sorghum cane	10,174,457
24.	Plums and prunes	10,299,495

In table No. 2 are given the values of the principal nut and fruit crops of the United States in 1909. Apples easily take the lead here, while six fruits show crops valued at over ten million dollars.

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Table No. 2

Nuts and fruit crops of the United States, 1909. (Everything over $1,000,000.)

1.	Apples	$83,231,492
2.	Peaches and nectarines	28,781,078
3.	Grapes	22,027,961
4.	Strawberries	17,913,926
5.	Oranges	17,566,464
6.	Plums and prunes	10,299,495
7.	Pears	7,910,600
8.	Cherries	7,231,160
9.	Raspberries and loganberries	5,132,277
10.	Blackberries and dewberries	3,909,831
11.	Lemons	2,993,738
12.	Apricots	2,884,119
13.	Walnuts (English)	2,297,336
14.	Pomelos	2,060,610

An interesting table showing the leading two states in the production of the fruit and nut crops of table No. 2 is given in the following table. It will be seen that in the production of the most important 14 nut and fruit crops of the United States, California takes the lead over all other states with nine of these and is second with two others.

Table No. 3

Leading states in the production of the nut and fruit crop, 1909:

1. Apples:		Bushels
New York	$13,343,000—	25,409,324
Michigan	5,969,000—	12,332,296
2. Peaches and nectarines:		
California	$ 4,573,775—	9,267,118
Georgia	2,182,613—	2,555,499
3. Grapes:		Pounds
California	$10,847,000—	1,979,687,000
New York	3,962,000—	253,006,000
4 Strawberries:		
New York	$ 1,187,410	....
California	1,149,475	....
5. Oranges:		Boxes
California	$12,951,505—	14,436,000
Florida	4,304,987—	4,852,967
6. Plums and prunes:		Bushels
California	$ 5,473,539—	9,318,000
Oregon	838,783—	1,748,000
7. Pears:		
California	$ 1,660,963—	1,928,000
New York	1,418,218—	1,343,000
8. Cherries:		
California	$ 951,624—	501,000
Pennsylv'ia	909,975—	475,000
9. Raspberries and loganberries:		Quarts
New York	$ 1,168,062—	14,751,940
Michigan	695,019—	8,381,943
10. Blackberries and dewberries:		
Missouri	$ 456,283	....
New Jersey	313,480	....
11. Lemons:		Boxes
California	$ 2,976,571—	2,756,221
12. Apricots:		Bushels
California	$ 2,768,921—	4,066,823
Washington	17,280—	10,789
13. Walnuts:		Pounds
California	$ 2,247,193—	21,432,000
14. Pomelos:		Boxes
Florida	$ 1,907,816—	1,061,537
California	143,180—	122,515

With such a record it might be expected that the fruit and nut crop of California is its most important crop.

Table No. 4—California Crops 1909.

1.	Fruits and nuts	$50,707,000
2.	Hay and forage	42,187,000
3.	Cereals	28,040,000

The relative importance of the varieties of fruits helping to produce this fifty million revenue is shown in the following table:

Table No. 5—Nut and Fruit Crop of California, 1909.

1.	Oranges	$12,952,000
2.	Plums and prunes	5,632,000
3.	Peaches and nectarines	4,574,000
4.	Lemons	2,977,000
5.	Apples	2,902,000
6.	Apricots	2,769,000
7.	Walnuts	2,247,000
8.	Pears	1,928,000
9.	Almonds	700,000
10.	Olives	401,000
11	Figs	260,000
12.	Pomelos	143,000

Deciduous Fruit Culture

SUMMER IRRIGATION OF DECIDUOUS TREES

Written for the California Cultivator
By J. W. Mills.

Young Trees

It is advocated by some growers and professional men that young deciduous orchards should be given no water the first few years after planting. The reason given is that the root system is inclined to be drawn near to the surface when summer irrigation is practiced. We are rather skeptical about that, in as much as we have never known of comparative examinations having been made of root systems of irrigated and non-irrigated deciduous trees. We do know that one and two year old peach trees in adjoining orchards, with only a road between them, one irrigated and the other not, show a remarkable difference in favor of the irrigated trees. We also had a good object lesson with Bartlett pear trees where the main orchard received but two irrigations during the summer, followed by intensive cultivation. An irrigation ditch broke and flooded a few trees in one corner several times, thus giving them that many more irrigations. There was more than four times the growth on the flooded trees that there was on those irrigated but twice. On a certain ranch in the Sacramento Valley there were two peach orchards planted on a creek bottom soil, composed of a black silty loam. One orchard was irrigated in June following planting and again about August. The other was irrigated but once and in the latter part of the summer.

At pruning time the following winter we cut off branches, sometimes two or three to a tree, from the twice-irrigated trees, that were as large as any of the entire trees in the late irrigated orchards. Both orchards were Elberta peach. In this case we are of the same mind as the late C. E. Rumsey, when he was criticized for fertilizing and irrigating his young citrus orchard more than had ever been done in his vicinity. He said he did "not know what the roots were doing, but the tops were doing a first-class business." And they continued to do so for years and are yet so far as we know.

There may be many examples of young deciduous trees being started wrong by early irrigation, but we do not know of them. From our experience with citrus trees it is our opinion that the roots of deciduous trees will distribute themselves along the lines of least resistance. If plenty of water is soaked into the ground to a depth of several feet, theoretically the roots will take their natural course when they do not have to come up to secure the required moisture.

In the case of citrus trees we know that the feeding roots will come to within 10 to 15 inches of the surface under any circumstances. We had occasion to make root investigations of citrus trees at one time and found where 16-year-old and 30-year-old orange trees were pulled out by the roots that the distribution of the roots was the same in both cases, though the older trees had always had an abundance of water and the

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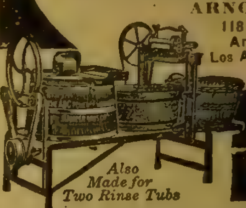

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others had always been short of water.

While awaiting actual demonstrations that irrigating young deciduous trees has a bad effect, and seeing the marked improvement in irrigated trees, we are inclined to advocate such treatment.

Bearing Trees

There is no question that irrigating bearing trees is profitable. It takes a great deal of moisture to make first-class fruit, and if it is not in the soil for the roots to get, it should be put there.

Avoid late irrigation, as it makes soft fruit that is low in sugar. The period of lateness is hard to determine in any variety, but taking as a basis for consideration a peach orchard that produces ideal fruit without irrigation: Such trees must be on land that furnishes a full and constant supply of moisture from below by capillary action. Moisture will not rise over four feet in ordinary soil. Deciduous tree roots go deep we know. Six to 10 feet is perhaps as deep as they go, but in all probability the bulk of the feeding roots are within three feet of the surface. If this is probable, which it is (by figuring that a foot of water in an old orchard greatly invigorates the trees, also knowing that a foot of water will not wet average soils over three or four feet deep), the water supply must be within eight or 10 feet from the surface. In such an orchard the trees and fruit are at all times drawing a steady supply of moisture and their development is gradual with no interruptions and perhaps of a little longer duration than in drier situations.

Now where trees are a little "short" and then a little "long" on moisture, the development is spasmodic and interrupted. If at the final period the flow of sap is stimulated, its elaboration, the process of sugar development, is rushed, and at the same time the process of exosmosis seems to dilute the sugar in the fruit. It is evident that in the case of land that requires irrigation, the largest possible quantity of water should be placed at a depth of four to six or eight feet at a time before the sugar-forming process commences. Who knows just when that occurs? That is a good problem for the experiment stations to solve.

Could we give the last irrigation at this unknown period, sufficient to soak down six or eight feet, no doubt we would secure large, firm fruit rich in sugar. It is our opinion that in the case of peaches the last irrigation should be when the fruit is hard green and about half grown. With prunes it will no doubt impair the quality if irrigated after the fruit becomes palatable. We had occasion to observe this in a Tehama County prune orchard. The fruit dried light and was rated as skinny by the buyer.

Some soils require more frequent irrigation than others and every fruit grower should determine what the character of the soil is five or six feet below the surface. A gravelly subsoil will require less water at a time, but more frequent irrigations.

Soils that crack after irrigation should not be cultivated at once, but allowed to crack, then irrigated again. This process repeated twice, giving three irrigations in succession, will put the water deeper into the soil than one thorough irrigation in the old way.

Just how long water should run in a furrow in order to soak down six feet must be determined by the irrigator, as the character of the soil determines that. Without a pipe system with adjustable valves, it is hard to obtain an even flow in furrows such as is necessary in order to get the water to a proper depth.

Pruning After Irrigation

Apricots and cherries are frequently pruned after the fruit is picked. It seems to improve the fruit buds for the following year. It is also a convenient time to do the work, as the fruit is off early and a slack time follows the harvest. Peach trees do not take kindly to summer pruning. Prunes are so late in harvesting that there is no advantage in late fall pruning.

Young trees should never be pruned in the summer, that is, before the bearing age, other than the removal of sprouts very low down on the stem that is to make the trunk. Every time a shoot is pinched off the growth is stopped at the time when it should be making its most rapid growth.

THE CALIFORNIA WALNUT GROWERS' ASSOCIATION

By C. Thorpe, Manager of the Association, Before State Fruit Growers at Davis.

In order to make any intelligent remarks regarding our organization it is necesary to first outline briefly the steps leading up to its formation. Years ago when the walnut industry was in its infancy in California there was no semblance of a steady price on walnuts, the price fluctuating from four to eight cents a pound to the grower, who was naturally at the mercy of the speculative buyer; conditions were then much as I understand they are now in the peach and apricot industry in California; the prices would often vary 50 per cent in a week or two. The average price to the grower was little, if any, above the cost of production, and not uncommonly the return was below cost.

At that time California walnuts were not favorably known to the trade of this country for the reason that there was no uniformity in grading, bleaching or packing methods, and consequently most of the crop went to the consumer in a very unattractive form.

It finally became apparent that some semblance of uniformity in packing and marketing methods was necessary if the industry was to develop and prosper. Thus growers in certain communities joined together and organized local cooperative associations and erected packing houses situated at near-by railroad shipping points where all members could conveniently haul their crop for grading, bleaching, packing and shipping, and more or less uniform rules for grading and marketing the product were soon developed.

During this stage each local association would, early in the harvesting season, call for bids on its entire output and sell to the highest bidder. This method of bunching the sale of the crop of a number of growers, together with better packing methods, soon brought more satisfactory and

(Continued on Page 105)

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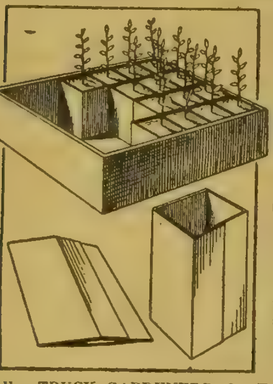

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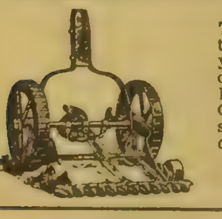

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TREE PLANTING IN SOUTHERN CALIFORNIA.

By W. Mervyn Carne.

(An Australian visitor to Southern California writing in the Agricultural Gazette of New South Wales gives descriptions of California streets and gardens and suggests lessons to dwellers in southeastern Australia.)

Southern California is a very large place, with perhaps as widely diverse conditions as may be found everywhere. But to Americans in general Southern California means those once barren valleys now known for their wealth and beauty throughout the world. To the Australian scenting home amidst the ever present gums come thoughts of the future. Surely we in Australia with natural advantages so similar to California can do as much for our land as the Americans have done for theirs. Redlands, Riverside and many another city have solved the old argument of city vs. country by being so much of both that one cannot say where one ends and the other begins. Small areas, intense cultivation and civic pride have made this beautiful country. It is "up to" Australia to do likewise. Much of the charm of the cities (all are not beautiful) lies in their trees. Almost to a tree they have been planted by hand, for except on the mountain ridges Southern California is practically treeless. Many kinds of trees are found in parks and gardens, but the following predominate and will probably prove the most useful in southeastern Australia. One of the most common is the pepper tree (Schinus molle), whose hardiness and rapidity of growth is proverbial and needs no emphasizing. Eucalypts of many species are used, but the bluegum (E. globulus) predominates. It is planted in avenues as breakwinds and in groves for timber and firewood. In avenues eucalypts are usually topped about six feet from the ground and send up three to six stems above that point. For firewood they are cut down and suckers allowed to shoot from the butt, three or four to each tree. The trees are cut over in rotation every four to seven years.

Silky oak (Grevillea robusta) is largely used in streets. The kurrajong, often miscalled bottle tree, and the camphor laurel give a pretty effect with their lighter greens and are often alternated. The former does not appear to produce seed in quantity, though Australian trees are usually very prolific in America. Pines are not largely used, though not uncommon, and include the Bunya Bunya and the Moreton Bay pines as well as Pinus radicata, the common pine about Sydney suburban streets. The most popular street tree is one not seen in Sydney yet well worthy of trial, though it grows wild from Tasmania to Queensland. That is the Blackwood (Acacia melanoxylon), one of the largest of our wattles and a valuable timber tree. It is used in great numbers, forming shapely, clean, dark green trees up to about 50 feet. It seems very free from the troubles, insect and fungous, which frequently bring about the premature death of acacias in Australia. Last and perhaps most striking of all are the palms. The majority belong either to genus Phoenix or to Washingtonia. The Phoenix palms are relatives of the date palm, itself sometimes used. Being relatively slow growing they are not so widely used as the Washingtonias. Until a few years ago the latter palms were known as Washingtonia robusta. It has been found that there are at least three distinct species, the best and hardiest being W. filifera. Another species, W. gracilis, is sold by seedsmen as W. robusta. Another smaller palm, Washingtonia sonorae, is also used, and a glaucous colored species called Erythea armata. Magnolias are not uncommon.

In Arizona few evergreen trees will survive the combined effects of frost and great heat even under irrigation and the favorite tree is the umbrella tree (Melia azedarach), better known to us as the white cedar or bead tree. It is usually topped to encourage the umbrella habit. The famous Magnolia Avenue at Riverside consists of three rows of trees—peppers, bluegums and an alternating row of silky oaks and Washingtonias. These with the blackwood in the streets form the bulk of the tree plantings in Southern California and serve as a striking object lesson of what can be accomplished among apparently unfavorable surroundings.

NOTES ON IRISES.

Spanish Irises.

These bulbous Irises are among the most attractive of the family, having numerous flowers with bright colors. They are hardy in a not too wet position; a satisfactory one being the second line under the south side of the house, where the first line is preferably vines, the foliage of which will serve as a background and foil to the Iris flowers. My bulbs seem to be too close to the house, especially in a season when exceptional dryness has rather shortened the blooming season.

The bulbous and Oncocyclus Irises are the most interesting of the family, and among the most interesting plants of any family. Those who grow a selection of these, however, give hostages to care, as many of them are decidedly miffy, and unless they have a suitable location, they live but decline to bloom, and the worst of it is that a location which pleases one year seems to lose its charm the next. Take as a familiar example of the Oncocyclus section, I. Susiana. This is a plant familiar to gardens for several hundred years, and probably every year it has been discussed by the gardeners, the most skillful ones of this generation still continuing the annual discussion. There seems to be a concensus of opinion that the proper culture consists in planting late in a sheltered position and drying off thoroughly after blooming. With all such care, however, it will be frequently found that some slight thing, like dryness, will cause them to go blind or refuse to flower It is a curious commentary on garden skill that one finds this iris blooming annually in gardens where no care is given to it, the owner, happily oblivious usually to the interest of the plant.

Thanks mostly to Herr Max Leichtlin, our gardens have been enriched by a number of interesting Oncocyclus irises—Lupina, Gatesii, Paradoxa and others of their kin, such as Leichtlinii and Korolkowi. These, with the old I. Iberica, are an interesting and beautiful lot for those who enjoy fine plants which are interesting in care and beauty.

Iris Pallida Dalmatica.

The great Dalmatian flag is one of the most attractive and among the largest of the family. It has broad, noble foliage, and the large flowers are of a pleasing light lavender with an orange beard. They are freely produced on stocky erect stems, without laterals, some three to four feet tall. The plant in bloom has an appearance of distinction and beauty and is worthy a prominent place in the garden. A delicate odor adds the last charm to this variety.

Iris Monnieri is a beardless iris with fragrant clustered flowers which are light lemon-yellow. The plant is attractive but not showy, except as grown in masses.—Exchange.

SHARPENING LAWN MOWERS

It is a general practice when a lawn mower becomes dull to take it to a shop to have it sharpened. At the shop there are two methods employed. One is to use a file on the reel and blade. This is a very poor way, as only experts with the file can produce a good job. More often the blades are uneven, being too high in places and too low in others. The result is the blades on the reel do not touch the lower plate or blade the same throughout their length, causing the mower to run hard and cutting the lawn unevenly.

The second method is to grind the blades of the reel in a special machine designed for that purpose. This is a much better way than the first method, as it leaves the blades quite true. But this method does not give the result required, as the lower plate or blade is not touched in the process of grinding. To put the mower in the best condition both the blades of the reel and the lower or fixed blade require sharpening.

A lawn mower may be sharpened at home at a very small expense and in such a manner that the objections alluded to above are entirely eliminated. Reverse the driving wheels on the mower, thereby driving the reel backward. Set up the lower blade until the reel touches it. Feed in between the reel blades and the lower, fixed blade, emery or carborundum mixed with oil to the consistency of thick paste. Run the mower over the lawn. This will grind the reel blades and the fixed blades at the same time. Both blades are made true with each other, and the mower will run as nicely and do as good work as when new. There is no danger of spoiling the machine by sharpening it in this manner.

Tubes of paste consisting of carborundum and grease are on the market for this purpose. A 25-cent tube of this paste will sharpen a lawn mower for a whole summer, and only a few minutes every two or three weeks will serve to keep the machine in first-class condition.—L. D. Crain, Colorado Agricultural College.

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WALNUT GROWERS' ASSOCIATION

(Continued from Page 103)

uniform results to the grower. But still there remained a big element of speculation in the marketing.

As the local associations became more numerous and the industry developed larger proportions, the growers concluded that it would be possible for them to gather for themselves such statistics relative to the extent of the walnut production, both here and abroad, and the demand for their product in the country's markets, as would warrant them establishing their own prices, and instead of selling their entire holdings to the local speculative buyers, they decided to engage local brokers to make the sales throughout the United States for them, paying for such services about six per cent brokerage.

This latter marketing plan soon proved its superiority over the other methods, and as a consequence more walnut associations sprang into existence in other districts, till the necessity for a closer union throughout the industry became apparent. Thus a body known as "the executive committee of the Walnut Growers' Associations of Southern California" was formed. While this committee had no legal standing it proved to be of considerable benefit. Each local association was a member of the executive committee and could send as many delegates to the meetings as desired, but the voting power was determined on a tonnage basis. This executive committee handled the large general problems that developed as the walnut industry became more important; it also called for bids and purchased the bags and other supplies required by its members; it secured the information necessary for the establishing of sensible prices, and just before the shipping season the committee would meet and disburse this information to its members, who would then discuss the price which, in their judgment, the associations would be warranted in asking for their product.

There could be no agreement between the different associations in the establishment of a uniform price and as the opinions of the associations differed widely, sometimes resulting in different prices being asked, thereby developing such keen competition with each other that the market was often demoralized to such an extent that the jobber became disgusted and refused to buy at any price. It is common knowledge that the trade of this country buys but sparingly on a declining market. The result was that associations frequently had to carry over a portion of their crop, a bad condition, especially as walnuts should be shipped in time to reach the market for the holiday trade, the big demand for the product developing around Thanksgiving and Christmas.

It finally became apparent that in order to promptly market the constantly increasing California walnut crop and protect the producer and jobber against spasmodic market demoralization and stagnation, a guarantee of prices against decline was necessary. To make such guarantee effective it must be backed by a strong organization; an organization which was fairly representative of the industry. It was pointed out that if a satisfactory guarantee could be given the trade they would be willing to purchase their season's requirements of walnuts at one time, and confidence in the business would be stimulated.

Consequently the California Walnut Growers' Association was organized by a number of representative individual walnut growers, as a cooperative, non-profit marketing organization without capital stock.

Fifteen of the local walnut growers' associations immediately contracted with the California Walnut Growers' Association for the marketing of their output, and subsequently other associations did likewise, until at present the California Walnut Growers' Association is handling the marketing of 17 local associations out of the 20 walnut growers' associations in California, and is marketing about 65 to 70 per cent of the total walnut crop of this state.

Each local association is entitled to one representative as member of the central association, but the voting power of members is unequal, each member having one vote for each 100 tons, or major portion thereof, which the association he represents ships annually. The members have regular meetings four times a year, at which meetings the general policies of the association are discussed, and to these meetings the local associations are invited to send up to five delegates, although only the one who is a member of the central association may actually vote. There are 16 directors of the California Walnut Growers' Association, every important walnut producing district being represented on the board. Directors' meetings are held monthly.

For the first two years of its organization the California Walnut Growers' Association continued to market its output through coast brokerage houses, paying a brokerage of five and one-half to six per cent—almost one cent a pound—but while this system seemed the most practical while each local association had to market its own relatively small output, it became apparent that with the immense tonnage the central association controlled through its marketing contracts with the 17 local associations, that it would be much more economical to establish our own marketing organization. Thus our sales department was established early in January of this year. We have been successful in finding a market for our entire estimated output of the 1914 crop and have been refusing all business offered us since May 2nd. It is estimated that we will save the local associations, for which we market, over $50,000 annually by this change in our marketing system.

Since the organization of the California Walnut Growers' Association, less than three years ago, we have inaugurated a number of important changes in the walnut industry, amongst which are the installation of a statistical department through which we gather valuable information relative to the size, quality, time of shipment, markets, etc., of foreign walnut crops; maintaining salaried agents in the principal foreign producing districts. The information we thus gather is invaluable to us in the establishment of a proper price which will move our crop in competition with the imported walnuts. We have adopted systematic methods of distributing the product throughout the country's markets, eliminating the old unavoidable practice, while marketing through the large coast brokers, of glutting certain markets with early walnuts while others were bare, by a system of furnishing practically all our trade with a very early supply of walnuts as a partial delivery, and then keeping them in a constant stock throughout the heavy consuming period, thus increasing consumption; we have established higher standards of grading and packing, thereby insuring the consumer a high class product; we have protected the jobber by giving him a guaranteed standard of crack, which must set out the minimum of good sound merchantable nuts any delivery must run. Our sales are made at a uniform price established by us for each grade at the commencement of harvesting season, and by guaranteeing these prices against our own decline we have gained the confidence of the buyer. By inaugurating our own sales department we estimate that our former marketing cost will be cut almost in half, and owing in no small measure to these developments we are now making the grower a reasonably satisfactory return, while the consumer is securing a better article at no increase in price. The grower is now receiving the middleman's former profits.

At present we are distributing our goods in 44 of the 49 states and supply 280 jobbing centers through 721 jobbers. We sell to the wholesale trade only. We are constantly working toward the improvement of our grade and pack, it being our endeavor to make the Diamond Brand, under which we ship all our first-class goods, stand for the highest grade of walnut obtainable anywhere.

The walnut industry in this state is slowly but constantly increasing. A normal crop is now over 25,000,000 pounds. The average consumption of the United States, however, is over 60,000,000 pounds, so there are obviously opportunities for the further development of this industry, and in my opinion it is only a question of time until there will spring up large and profitable walnut districts to the north of Southern California. I also beli[illegible] the grower would receive just [illegible] same, if not a better price, if the California production was increased 50 to 75 per cent.

Some fresh deciduous fruit is shipped from America to Uruguay, but most of the green fruit on that market comes from Tasmania and Australia.

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LOS ANGELES, CAL.

Farmers Express Opinions

Still Endeavoring to Figure Out How a Farmer Can Farm on the Eight-Hour System and as yet See Only Failure if the Initiative Measure Passes

W. A. Johnstone, Los Angeles

The proposed eight-hour initiative measure, which is universal in its application and compulsory, should be defeated. If a majority of those who vote on it favor it it will immediately become the law of the state and cannot be amended by the legislature. It can be changed only in the same manner in which it was adopted, by submission to a vote of all the people of the state. It is held by some people who favor an eight-hour day that a liberal construction will be put on the law if adopted and that farmers will be permitted to override the law in harvest times and stress periods of labor. A careful reading of the law will show that the measure has been most carefully drawn to prevent any free construction of its terms, and the courts are more than likely to say: "as the people themselves voted, so shall it be." The only presumption that can be taken is that the law, if adopted by the people as a whole will stand and be enforced until changed by themselves, and in the ordinary procedure, two years would be required to do it. There is no elasticity in its terms to allow any gradual adaption of any business to its provisions. To suddenly apply a rigid law of this character to every business of the state is apt to do great harm and little, if any, good.

The agricultural interests of the state are greater than all others, and a consideration of this law in the columns of the Cultivator must naturally view its effect from this angle. At the present time the agricultural statistics show that the California farmer and fruit grower is paying better wages and requiring shorter hours than the rest of the country. There is no general complaint by our workers against hours or wages. On the contrary, the workers eagerly accept the work offered and willingly put in long hours for the overtime pay in the harvest periods. It is extremely doubtful if with an eight-hour day anything like enough help is available to handle our grain, fruit, nut and vegetable harvests. If more floating help is imported, what will be done with these workers in the slack seasons? Furthermore the earnings of our agriculturist are not large enough to permit of any large increase in his expense account, so that if he must have more help he will be forced to reduce the pay of his old hands in proportion to the reduction of his hours of work in order to meet his increased pay roll for new hands required. His best men will then probably leave him for other fields where higher wages may be paid. The employer will find his work impeded in a thousand different ways. His work must all be carefully timed to avoid an infraction of the law. If overtime were permitted this would preclude his finding a valuable team and oufit abandoned by the roadside because of bad weather or accident. If he has a pumping plant and has a pump tender watching it, under the new law he must have three at a triple expense. Two night watchmen for our fruit packing houses will be required, where there is now competition for the places where the work is done by one man. Any farmer or fruit grower need only consider the application of this proposed law to his business very briefly to realize how difficult it would be to operate under it, and it must be remembered that the responsibility for an infraction of the law rests entirely upon the employer. There is no penalty imposed against the worker who violates the law. Any employer or his agent or representative who permits his employe to work more than 48 hours in a week is guilty of a violation of the law. He may not know that the man has worked already in the week for someone else or the workman may conceal the fact from him. Under the terms of the law this makes no difference; he is guilty if he "permits" it to be done. Further, he is guilty if his agent or representative "permits" it, without his knowledge.

From the worker's standpoint it is restrictive and prohibits him from selling to any one one minute more than a specified amount of his product which he has to sell, and no matter how great his ambition or how dire his need he can market but 48 hours of his time in a week; no more unless there come a fire or flood. Unless there are sound reasons of public policy to the contrary, every adult male should have the right to sell his labor as he sees fit. Such a restriction as is proposed by the eight-hour law would destroy all initiative on the part of the worker, operate to create a practical monopoly of labor and reduce the ordinary workingman to a form of serfdom that would be intolerable in America.

In its terms, the measure is so similiar to the eight-hour bill introduced by the Socialist member from Los Angeles at the last session of the legislature, as to betray its origin. His bill was refused passage by the legislature. It had the perfunctory support of the union labor lobby but it was privately admitted by some of them that a law of this character was impractical at the present time. It is my opinion that the eight-hour standard for a day's work will be, in time, adopted, but such a change must be made in such a manner that both the business and the worker can be adapted to the change without unnecessary disturbance.

HERE IS THE EIGHT HOUR LAW

"An Act to amend the Penal Code by adding a new section thereto, to be numbered 393½, limiting the hours of labor of employes and providing a penalty for violations of the provisions of this Act.

"The People of the State of California do enact as follows:

"Any employer who shall require or permit, or who shall suffer or permit any overseer, superintendent, foreman or other agent of such employer, to require or permit any person in his employ to work more than eight hours in one day or more than 48 hours in one week, except in cases of extraordinary emergency caused by fire, flood or danger to life or property, shall be guilty of a misdemeanor, and upon conviction thereof shall be fined not less than $50 nor more than $500 or imprisoned in the county jail not less than 10 nor more than 90 days, or both so fined and imprisoned."

R. Schellens, Redwood City.

It seems to me that the initiators of the eight-hour law are the worst enemies of the laboring man. How is the laboring man helped if conditions are created that make it impossible for the employer, especially the small employer, to exist? And suppose we would get this foolish law and it would work contrary to the expectations of its friends—as it surely will—would they then propose to give us a six-hour law or a four-hour law, or would they prefer a day off twice a week with full pay and full board and music band entertainment? If times are hard, can they be made better by working less, and would in that case the cost of living be decreased or rather increased? Also, in this country of many opportunities, we are so lucky as not to have as yet a working class such as they have in the older countries. Any person that is sober and healthy in mind and body has a thousand chances to improve his condition, and if he is a laborer today, he is under ordinary circumstances an employer within a few years from now. What we want then is not laws that make this change from employe to employer harder, as this law will do, but laws that will encourage the thrifty, the men that have saved their money to invest it in industries, in farms and other improvements. This would create a condition equally desirable for employer and laborer. It is exactly as Mr. Bloch from San Diego County in your number of July 2nd says:—this law, if enacted, would be disastrous to the small employer; the larger employers would not feel it so much. But I should like to ask the gentleman from San Diego County, who is in favor of this law in spite of all that: Who is more desirable as a citizen, the large or small land holder? Also, I should like to know, what chances the laboring man has under this new law to become independent? As a large employer he cannot begin, and on a small scale he would have no show whatever. So this law would work directly toward keeping him down, would prevent him from improving his condition and would create that class distinction which we see in the old countries. May the workingman look out for the wolves in sheep skins.

G. H. Hecke, Woodland.

The Farmers' Protective League is gaining ground in the north, and I hope that the Citrus Protective League in the south is fully organized by this time to take up the campaign there. I enclose a copy of a proposed initiative measure, No. 13, for the state of Washington. You will note in this initiative measure, which is also fathered by the Socialist party, that the agricultural laborer is placed on a ten-hour labor basis, and that a more liberal provision is made for overtime. On the basis of such a law, something might be done in California with the next legislature, if the proposed eight-hour amendment is beaten in November.

Initiative Measure Proposed for Washington.

"An act prohibiting employers from

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AN UNFAILING
WATER SUPPLY
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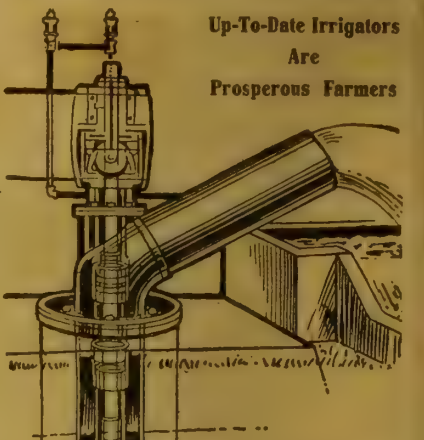
Make Larger Profits
Up-To-Date Irrigators Are Prosperous Farmers



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requiring or permitting employes to work more than eight hours in any day of twenty-four hours, except in agricultural labor and cases of emergency; providing for extra compensation for overtime; and fixing a penalty for the violation thereof."

Be It Enacted by the People of the State of Washington:

Section 1. It shall be unlawful for any person, corporation, company or joint stock association to cause, require or permit any male or female employe in his, her or its employ to work more than eight hours during any day of twenty-four hours, nor more than forty-eight hours during any week of seven days, except that in agricultural labor an additional two hours per day may be allowed for work which is unavoidably and necessarily incidental to farm management.

Provided, however, that in case of extraordinary emergency, such as danger to life or property, or where such eight-hour limit would unavoidably and necessarily prevent other workers in the same mine, mill, factory or other industrial unit from working the full eight-hour day the hours for work may be further extended, but in such cases the rate of pay for time employed in excess of eight hours of each calendar day, shall be one and one-half rate of pay allowed for the same amount of time during eight hours service.

Section 2. If for any reason any of the provisions of this act shall be adjudged unconstitutional and invalid it shall not affect the validity of the act as a whole or any other part thereof.

Section 3. Any employer, overseer, superintendent or other agent of any such employer, who shall violate any of the provisions of this act, shall, upon conviction thereof, be fined for each offense in a sum not less than ten dollars nor more than one hundred dollars for each day during which such violation continues.

* * *

If an eight-hour law is necessary or wise at this time, something following the line of the above would show far better judgment than the bill which is proposed for this state. For example, note the emergency clause which permits, under certain conditions, overtime work for which extra pay is provided.

* * *

Edward Berwick, Pacific Grove.

Some alleged friends of the farm laborer have demanded our votes for an eight-hours a day, 48 hours a week, new labor law, enforced by fine or imprisonment against the housewife or husbandman, who shall dare to let their help work more than eight hours in any one day, or 48 hours in any single week. If maid or man work on Sunday, as is almost inevitably the case with such farm employes as dairymen, cooks, etc., the days then would be only seven hours each for six days and six hours for the seventh, making the 48 hours for the week. As much farm work includes the use of a team of from two to 32 mules or horses, the new law would practically mean the same short day for these; as a second shift of men would, at least in winter, be impracticable.

It is intimated that as much work would be done by the men in the reduced hours proposed as is done now. This certainly would not apply to the horses. It is presumable that the farmer himself should, with his wife, also be placed on the eight-hour footing. This then would involve the reduction of all farm work by one-fifth, and the diminution of farm produce by one-fifth. California now is credited with an annual agricultural product of $372,500,000. Reducing work hours from ten to eight hours, we get a rule-of-three sum, thus, as ten hours is to eight, so is $372,500,000 to $298,000,000. But this diminished output will cost about as much (for the same wages and food will be demanded by man and beast) to grow as does the present product. One of the first results then would be the raising of all food prices one-fifth, or failing that, the bankruptcy of the farmer, who, it is safe to say, does not now make a 20 per cent profit on his sales.

So to the humanities involved, at present the farm worker can spend ten hours earning his living in the open air, two hours eating his meals, four hours reading and eight hours sleeping. He has also in winter, days of enforced idleness on account of weather or soil conditions. He frequently works sitting, and under no oppressive surroundings.

But time is the essence of farm work; neither weather nor soil will await the laggard, and when a farmer's teams have laid idle three days in a week, it is ridiculous to send him to prison because he wants to work them ten hours a day for the other three days.

WHY JOIN THE FARM BUREAU ASSOCIATION?

Farmers sometimes ask the question, "Why should I become a member of the farm bureau association? I can get all the benefits of the farm bureau without becoming a member." Mr. L. A. Clinton answers in Farm Management Monthly as follows:

Every farmer and every other person interested in the success of the agriculture of a county should become a member of the farm bureau association because:

The farm bureau association is the organization in your county the purpose of which is to unite all the agencies of the county and bring them to work together for the advancement of the rural interests.

Agriculture is the only great industry in which there has been little, if any, community of interests. The time has now come when this community of interests must be established if the farmers are to reap their just returns from their business. All farmers of the community must be included if best results are to be secured.

While the county agricultural agent is expected to render assistance to any farmer in the county who asks his aid, those who are members of the farm bureau association, by reason of their familiarity with the work, are in position to make use of the county agent because they know how to use him. Half of the success in getting assistance is to know when we need assistance and where to get it.

The small annual membership fee is not a burden upon any one, yet with a large membership the funds so provided will do much to encourage the county board of supervisors to assist, and in the general betterment of the county each member will be amply repaid.

The county farm bureau needs the moral support which comes from a large and united membership. As farmers begin to work together for their own interests, opposition from other interests are certain to develop. A united front on the part of the farmers is needed to meet and overcome this opposition.

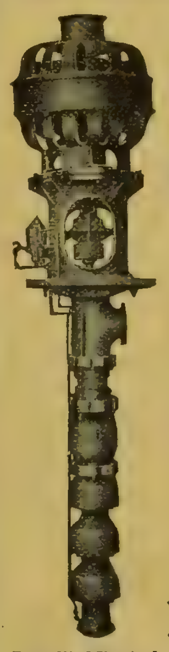
Membership in the farm bureau association should carry with it the right to vote in the election of officers of the association and a voice in saying what the work of the association should be in a county. This will tend to create interest in the association and should make every member feel that he is in part responsible for the success of the farm bureau, as well as give the bureau a sense of responsibility to him.

Any permanent improvement in the agriculture of a county must come through the work of the people of the county themselves. While the county agent employed will act as leader and coordinator of the forces [illegible] county, there must be forces to coordinate and people willing to work together under a competent leader.

This county farm bureau movement is not an economic movement only; it is also social, educational, inspirational. To be recipients only may result in decadence, but to be active workers for the general community interests, of which our own interests are a part, can only result in making strong, virile, public-spirited citizens The returns to the individual are far more than financial.

Life is for the most part made up of trivial incidents which have to do wth our own family relationships and with those people who with us make up our community. Just what these incidents shall be, whether pleasant and agreeable or otherwise, depends largely upon the attitude toward life. If all are united for the purpose of community betterment, for the purpose of seeing that each individual of the community has opportunity for the development of the best talents he possesses that he may thus contribute not only to his own happiness, but to that of others, rural life in America will come to mean far more than it has ever before meant.

"In union there is strength" is just as true today as ever. The farm bureau is designed to serve the entire community and has no selfish personal interests to advance. It therefore can justly claim for membership in the association the support of the entire community which it is designed to serve.



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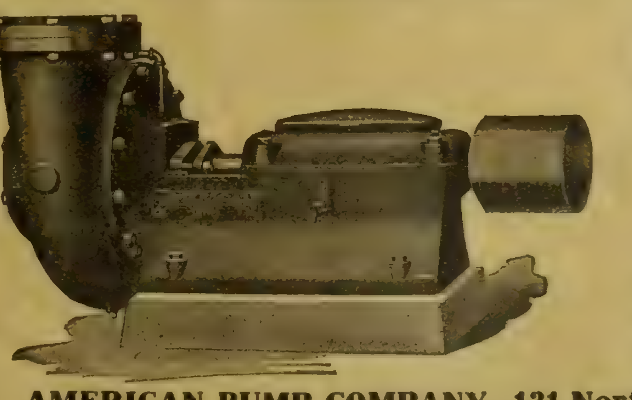

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Established 1889. Twenty-fifth Year.

The California Cultivator

Rural Californian combined with the California Cultivator

A Journal of Horticulture and Agriculture

By

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Thursday, July 30, 1914

OUR ADVERTISERS RELIABLE

We guarantee our subscribers against loss through dishonesty of any advertiser in the Cultivator. We do not attempt, however, to adjust trifling differences between subscribers and honest, responsible advertisers, nor will we pay the debts of honest bankrupts. Notice of complaint must be sent us within 30 days from date of the transaction, and the subscriber must have mentioned the Cultivator when writing the advertiser.

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UP AT PORTERVILLE

While at Porterville a few days ago the editor was given a most delightful ride "in the gloaming" in the machine of Mr. W. E. Sprott, and from several sightly elevations views were had of orchards, alfalfa and grain fields in extent sufficient for a principality. We have not the room to write of the rich lands this week, but next week "An Alfalfa Feeding Proposition," will tell of the beginnings of what we believe will be a most successful scheme of marketing alfalfa "on the hoof."

Then there is Porterville's cooperative cannery. The Cultivator camera was there on the first day's run. We also have information regarding it which will be interesting to believers in cooperation.

MINIMUM WAGE

Workers at the headquarters of the socialist party announce that they will be unable to secure sufficient signatures to place the minimum wage law on the ballot in 1914. Other names will be solicited, however, and the aim of the party is now to secure sufficient signatures before January 1, 1915, so that this issue may be placed upon the ballot at the general election of 1916. The fight, while deferred, will be before the farmers within the next two years. This minimum wage petition provides for a daily wage of not less than $2.50 for adults between the ages of 18 and 60, and not less than $1.50 for persons under 18 years of age.

TRANSPORTATION PROBLEMS

The Association of Western Railways is sending out circulars appealing to all shippers and receivers of fruit to use all possible expedition in loading and unloading cars. Never have the crops of California equaled this year's. Every car which will hold up will be used to transport produce. Not only that, but the car should not be allowed to remain on the siding any longer than is absolutely necessary. This request of the railways is most reasonable, and the railways put it most reasonably. They ask that all products, such as coal, lumber and similar supplies, be shipped before the heavy crop movement starts, that cars be loaded to full capacity, that the receiver anticipate the disposition of his freight before its arrival, and, regarding loading and unloading quickly, "If, without additional cost, the use of greater force will get the load ready for movement or the car released more quickly, do it."

RAISE THE STANDARD

A new citrus growers' association has been formed at Porterville with the avowed purpose of shipping a grade of fruit which will command a market and at a materially advanced price over the ordinary run. Every effort will be made to hold each package of fruit up to the highest standard and make a fight for better returns because of this guarantee of quality.

Would not this be a wise move for every section of the state? The market is becoming more exacting every day; the competition is becoming stronger. In the case of oranges, Florida is enforcing standardization by a state law. California fruit shippers will suffer if they do not meet the demands of the market.

Besides the orange growers the grape growers are joining in this general movement; apple growers are discussing it, all fruit men are agitating legislation on this point. It is unfortunate that all of the growers and shippers, especially the latter, are not of a class which makes legislation unnecessary, but they are not, as conditions in the past have shown. The coming Fruit Growers' Convention to be held in Los Angeles will be a most opportune time to discuss such matters. Certainly enough legislation has been proposed which is discouraging to the farmers of this state; now let us have something which will be beneficial.

THE COVER

The illustration on the cover page of this issue gives many scenes in road-making in California. Each one of these shows some of the work being done by the state highway commission with the $18,000,000 road fund. It has not been possible for the commission to locate these roads where many people in the state have wished them. In fact, the funds at the disposal of the commission would not permit improving all the roads of the state, and that would be the only way to please all, but wherever they have been located the construction has been of the best. We grant there has been criticism from the contractors and their friends because the commission has held them rigidly to the fulfilment of their contracts, and also from others who wish good roads but prefer other forms of construction. But with the material at hand, we believe California will make such a showing for good roads—if it has not already—as has been made by no other section in the United States. All we wish will not be done when our visitors come next year, but between the work by the state commission and by the various counties, there will be hundreds of miles of permanent roads with durable foundations. Not only will they make a good impression upon our visitors, but they will make for more economical marketing of our products.

FUMIGATION DOSAGE

A perplexing feature of fumigating citrus trees for scale pests is the adjusting of the quantity of cyanide to the cubic contents under the tent. With marked tents and carefully figured schedules which make allowance for leakage, still indifferent work is done, yet fumigation is the most satisfactory process yet found for the control of many insects. Therefore, the vital question is how to secure more perfect results from fumigation.

The last year furnishes a case in point; many sections report complete failure of fumigation; others, almost as complete success. We have heard one grower say that he believes the indifferent work was caused by growers insisting that if trees showed any injury from fumigation they would bring suit for damages. Consequently the contractors were overcautious and the minimum dosage which they used gave minimum results.

No fruit grower should fear a little burning of the tender growth of orange or lemon trees, in fact, we know of some shrewd orchardists who have insisted that there should be some indication of burning on the tender growth of every tree in the orchard as it is to a certain extent an indication of thorough work.

Of course the effect of hydrocyanic acid gas is not yet thoroughly understood. Some atmospheric conditions seem to cause serious tree injury with the same dosage which has been safely used at other times. While no grower wishes to encourage treatment of his trees which will lessen their productive value, yet he should insist on thorough work being done. The fruit grower has enough obstacles to overcome without having to pay immense sums for ineffective fumigation and the dosage which is too light is of absolutely no value.

Another burden which the laborers have sometimes insisted upon placing on the orchardist is that fumigation gangs should consist of seven men; the usual foreman or estimator, the cyanide man, an acid man and then four tent men instead of the usual two. Of course, it must be admitted that where two men handle a 45-foot tent all night, especially when the dewpoint has been reached and the tent is saturated, they are engaged in hard work. But the burdens of the fruit grower must end somewhere or he must find some other business.

Agricultural News Notes

Texas expects to have a big honey crop this season.

The area planted in sugar beets in Bohemia this year is 352,839 acres.

Ireland's annual production of honey approximates half a million pounds.

Tasmania exports 5,000,000 rabbit skins each year, valued at $250,000.

More than 20,000 people die every year in India from snake bites, according to official reports.

The Cretan orange grown in Greece much resembles the navel, being thin-skinned, oval shaped, with few seeds.

A Georgia-Florida fair will be held at Valdosta, Georgia, in October, counties and citizens of both states exhibiting.

Sugar planters of the Philippines are reported in serious financial straits owing to the poor quality of their crops this year.

Russia this year has more than two million acres planted to sugar beets. Last year the total acreage was slightly over a million and a half.

The Greek government has established eight agricultural experiment stations. In each practical instructions are given. There are also two model farms.

Drouth has considerably cut down the cantaloupe yield in Indiana, and while the acreage is larger than ever before, the crop will be much smaller than last season.

In the campaign of the department of agrculture to extend corn growing in the Philippines it has been found that the corn grown in Moro province is much hardier than that grown in other sections. Consequently Moro corn is being utilized for seed.

Potato growers, dealers and railroad men met in Salem, New Jersey, on July 17 to confer on the matter of putting out better potatoes. The growers agreed to take care in digging, covering and grading the tubers, and the railroads to furnish ventilator cars.

In the Yellowstone National Park 12 successive forests, one on top of another, have been buried by outflows of lava and petrified, according to a pamphlet entitled, "Fossil Forests of the Yellowstone National Park,". issued by the department of the interior.

An American agricultural colony is being established in the Lanao district of the Philippines. There are about 100 families. Many of the men have been in government service either as soldiers or civilians and have married Filipinos. The government will assist the colonists by small loans.

The market price of olive oil in Syria is advancing This advance is attributed to the unsatisfactory prospects of the coming crop. On account of this increase cottonseed oil is now being imported from Egypt for mixing with native olive oil. Though this process is prohibited by existing regulations, the dealers of olive oil mix their oils with imported cottonseed oil without any hindrance from local authorities, who do not seem to be disposed to take any proceedings against them. Olive oil is worth there for first quality, about 12.45 cents per pound; second quality, 11.55 cents per pound; third quality, used in the manufacture of soap, 10 cents per pound. The actual price of cottonseed oil is 7.30 piasters per oke (9.68 cents per pound).

Agricultural News Notes of the Pacific Coast

Northern California

Oroville is sending out heavy shipments of green fruit daily.

The fifth Gravenstein Apple Show will be held August 3-9, at Sebastopol.

Napa County's new farm adviser, H. J. Baade, will take office the first of August.

Dr. Hayes, veterinarian at the university farm, reports a number of cases of hog cholera.

The farmers of Mendocino County had a big picnic and barbecue last Saturday at Clark's Grove.

The Dinuba Melon Growers' Association has already passed the 100-car mark in shipments of melons.

The first definite price reported on Thompson Seedlesss was from Yuba City. It was $14 per ton on the vines.

Dried fruit packing concerns are being urged to put up small boxes of assorted dried fruits as an advertising feature.

Farmers of Placer County have organized a branch of the Farmers' Protective League to fight the proposed eight-hour law.

In his June report Horticultural Commissioner Bowman of Placer County reports that much injury has been done by the pear slug in ochards.

Systematic experiments with pruning of apricot trees are to be made in the Winters section under direction of Horticultural Commissioner Hecke of Yolo County.

Hop growers of the Sacramento Valley are again having trouble with the I. W. W'S. It is reported that a general strike of hop pickers has been ordered for August 10th.

The Alameda County Farm Bureau has not yet secured sufficient members to insure the appointment of a farm adviser, but they are still working for additional members.

Some of the grape growers who have joined in the movement to prevent shipping of unripe fruit are planning to bring the matter up for legislative action at the next session.

The grange of Patrons of Husbandry, established at Rutherford in Napa County less than a month ago, already has a membership of over 100. The construction of a grange hall is now being considered.

An irrigation project has been launched in the Anderson-Cottonwood District, of Shasta County, to place water on 30,000 acres between Redding and the north line of Tehama County. It has been estimated that water can be placed on the land for less than $12 an acre.

The warden of San Quentin has announced that there are plenty of grain sacks available now at 8½ cents, to fill all orders. Earlier in the season no orders were accepted for more than 10,000 bags. This restriction was made to protect the small farmer from speculative buyers.

Directors of the Ukiah Hop Festival Association are making plans for the coming festival and county fair to be held in Ukiah, September 15 to 20. Of the $1250 appropriated by the county for premiums $600 will be used for agricultural awards, $500 for stock and $150 for poultry. The association expects to add to these amounts.

Central California

Tuscan Clings are being picked in Stanislaus County.

Citrus growers of Tulare County have begun fumigating for grey scale.

Olive growers of Tulare County are planning to organize an olive association.

Onion growers have been receiving extra good prices for their crops this year.

Stockton is shipping from 12 to 20 cars of onions a day to eastern markets.

Tulare County citrus growers are putting up a stiff fight against the gray scale.

W. N. Barr has been appointed grape tester and inspector at Dinuba, Tulare County.

The State Beekeepers' Association has decided to make an exhibit at the Panama Pacific.

The citrus men of Porterville, Tulare County, state that one of the finest crops of lemons in the history of this district is in prospect.

Apple growers of the Pajaro Valley met at Watsonville on July 20 to try to devise some plan to keep out cull apples shipped in from other states.

Visalia's first fruit train for the East left July 20th. The train consisted of 24 cars of green fruit bound for Chicago. It will be on the market in four days.

A number of meadows of the Sequoia National Forest have been set aside for the use of tourists and campers, and have been fenced against range cattle.

Picking of Thompson Seedless grapes has been suspened at Turlock for several days, owing to a misunderstanding regarding the temperature at which the grape should test 17 per cent sugar.

Turlock melon growers are now receiving prices ranging from $7 to $9 per ton. The volume of shipments is steadily growing, and the prediction is made that the $5 mark will be reached soon.

A new orange growers' association has been organized at Porterville, Tulare County. It takes the name "Comet Association" and has leased a packing house of the Porterville Citrus Association.

The Porterville Citrus Association has made changes in its by-laws whereby picking, packing and grading of fruit are placed under control of officials of the association. Fruit for early market is to be judged by palatability and appearance.

The first annual California State Dairy Fair will be held in Modesto, October 14-15. The fair is backed by six organizations, Creamery Operators, Creamery Managers, State Dairy Association, Jersey Cattle Club, Holstein Friesian Association and Live Stock Breeders.

Thompson Seedless and Malagas are now being shipped out of the valley and the California Green Fruit Growers' Association already has two or three inspectors watching to see that the fruit comes up to the required sugar test. More inspectors will be put to work as shipments increase.

Southern California

Beaumont, Riverside County, is shipping out early apples.

The great San Joaquin Ranch of Orange County has 21,000 acres in beans this year.

Date growers of Imperial Valley met July 25 in El Centro to form an organization of valley date growers.

Grape growers of the Imperial Valley estimate that their output this year will reach close to 150 carloads.

The Fruit Growers' Association of Beaumont has let the contract for a new packing house.

Bee men of the country about Beaumont, Riverside County, report a large yield of honey of extra quality.

From Oxnard comes the statement that the Lima Bean Growers' Association is not satisfactory to many members.

Bloomington, San Bernardino County, has formed a protective association to fight scale and other tree pests.

President Murish of the Heber creamery is urging cooperation in marketing of the various creameries of the valley.

Because of technical defects the courts have declared the California game law of 1913 unconstitutional. This restores the old game law of 1911.

The Orange County sealer of weights and measures has announced that he will hold dealers as well as producers responsible for short weight packages of berries.

A number of citrus growers of the Alta Loma district, San Bernardino County, are considering withdrawing from the Cucamonga Association and building a new packing house at Alta Loma.

Coachella, Riverside County, has shipped several carloads of Thompson Seedless. The first car of grapes shipped from this point was mixed Thompson Seedless and Malagas and brought $2480.00 in Chicago.

The work of pitting apricots is ended in Orange County. The fruit in many sections is reported as too small to pay for harvesting. In other sections much fruit went to waste because growers were unable to secure sufficient help.

Scale is reported very numerous on citrus orchards in the Rialto district of San Bernardino County. The Rialto Orange and Lemon Assocation has opened a campaign against the scale, with its first consignment of spraying material amounting to 20 tons.

Ranchers of the San Luis Rey Valley of San Diego County are harvesting their sugar beets, which are being shipped to the Santa Ana Sugar Factory. The planting in the San Luis Rey Valley this year amounted to 2000 acres and the yield was very good.

The Boys' Agricultural Club of the El Cajon Valley, San Diego County, high school held an open meeting July 23, when samples of corn raised by dry farming methods were exhibited. County Farm Adviser Armstrong and County Horticultural Commissioner Weinland were among the speakers.

The Coast

According to the July crop report, Arizona will produce 592,000 bushels of corn.

The Farmers' Produce Association of Willcox, Arizona, is making plans for a fall agricultural fair.

The first consignment of Malagas received in Spokane from California, sold for 20 cents a pound.

The Hindoos who have been trying to land at Vancouver have finally given up the fight and returned to India.

Cool weather in Portland has seriously checked sales of melons. Several dealers have cancelled their orders.

Some ranchmen of Arizona are experimenting with silos of adobe lined with cement, placing them half below ground.

The British Columbia Federation of Labor has passed a resolution demanding the exclusion of all Asiatics from Canada.

The recently appointed demonstrator of Utah County, Utah, has begun his work with headquarters at Provo. The new adviser is Mr. A. B. Ballantyne.

Directors of the Oregon State Fair announce that dairy prizes for this year's exhibits will be much larger than ever before. The list of awards has been published.

Wool growers of Utah have been conferring on the matter of improving their grading and pack of wool. They hope to adopt the Australian method of preparing wool for market.

Many apple growing districts of the Pacific Northwest will exhibit at the 20th annual convention of the International Apple Shippers' Association in Boston, Massachusetts, October 5-7.

The Washington state department of agriculture has issued a report estimating fruit shipments from all commercial fruit districts for the year at 17,000 cars, as compared to 11,895 cars last year.

Concession in freight rates, to take effect in the near future, is promised Northwest fruit shippers, which will save between two and one-half and three cents per box on peaches to Missouri river and eastern points.

The Willamette Valley Prune Growers' Association of Salem, Oregon, has recently celebrated the fourteenth anniversary of its foundation. It is one of the oldest cooperative fruit associations in the state.

The Montana quarantine against Utah fruits and vegetables will be raised on August 1st, provided each consignment of fruits or vegetables bears an official certificate from the state horticultural inspector of Utah.

According to recently compiled statistics the Yakima Valley Fruit Growers' Association shipped over 1,000,000 boxes of fruit in the season of 1913-1914. Peaches were the largest single item, over one-half million boxes being shipped.

The Fruit Growers' Association of Gresham, Oregon, has elected the following officers for the ensuing year: president, H. E. Davis; vice-president, James H. Sterling; secretary, Karl H. Miller; treasurer, Bank of Gresham. James H. Sterling was appointed field manager until the annual meeting in January, 1915.

The Secret of Making Profit out of Stock GILBERT HESS, Dr. of Veterinary Science Dr. of Medicine

I want all you farmers to get this fact riveted in your mind regarding stock—that the only animals that are paying you a profit are those that are *digesting* their feed—bowels regular every day and absolutely free from worms.

And it is just at this very time of year when stock are not in that condition, because they are cooped up, deprived of exercise and for the last few months have been on dry feed, which does not contain the laxatives and tonics so abundantly supplied by grass.

Dr. Hess Stock Tonic

Aids Digestion Makes Stock Healthy Expels Worms

Being both a Doctor of Medicine and a Doctor of Veterinary Science I formulated Dr. Hess Stock Tonic to aid digestion, make stock healthy and expel worms.

This scientific, 21-year-old preparation contains highly concentrated tonics that improve the appetite and aid digestion, laxatives for regulating the bowels and vermifuges that expel the worms.

Remember, it's the cow in the pink of condition that fills the milk pail, the steer with an appetite that lays on fat, the horse that enjoys its dinner that pulls on the bit, the hog that is healthy and free from worms that gets to be a 200-pounder in six months.

Dr. Hess Stock Tonic will positively put your stock in these conditions. So sure am I that it will, that I have authorized your local dealer to supply you with enough for all your stock and if it does not do as I claim, return the empty packages and get your money back.

Dr. Hess Stock Tonic is never sold by peddlers—only by reliable dealers whom you know. I save you peddler's salary and wagon and team expenses, as these prices prove: 25-lb. pail $2.25; 100-lb. sack $7.00. Smaller packages in proportion.

If not sold by your dealer, write direct to

DR. HESS & CLARK, Ashland, Ohio

Dr. Hess Poultry Pan-a-ce-a

A splendid tonic that tones up the dormant egg organs and keeps the hens scratching and happy and laying all through the winter. Shortens moulting period and promotes rapid feather growth. Nothing better to make chicks strong and healthy. Cheap—a penny's worth is enough to feed 30 fowl per day. Sold only by dealers whom you know. Never sold by peddlers. 1½ lbs. 35c; 5 lbs. 85c; 25-lb. pail $3.50. Guaranteed.

Dr. Hess Instant Louse Killer

Kills lice on poultry and all farm stock. Dust the hens and chicks with it, sprinkle it on the roosts, in the cracks or, if kept in the dust bath, the hens will distribute it. Also destroys bugs on cucumber, squash and melon vines, cabbage worms, etc., slugs on rose bushes, etc. Comes in handy sifting-top cans, 1 lb. 35c, 3 lbs. 85c. I guarantee it.

The Hinman Milker

HINMAN THE UNIVERSAL MILKER

Sold two hundred machines its first year, 1906.

Sold OVER ONE THOUSAND in March, 1914.

The absolutely reliable, simple and reasonable in cost.

324 American Bank Building,
Los Angeles, Cal., Feb. 23, 1914.
Mr. C. F. Daniells & Son,
Modesto, California.

Gentlemen:—The machines, as operated on my ranch in the San Gabriel Valley, do all that you claim for them in your descriptive circular.

Yours sincerely,
C. L. POWELL.

C. F. Daniells & Son California & Oregon Agents Hinman Milking Machine Modesto, Cal.

WATER PIPE

ALL SIZES

Hot asphaltum dipped, new threads and couplings; 2nd-hand in name only. Prices far below your expectations. Screw casing and standard pipe fittings and valves.

The Exclusive Pipe House.

PACIFIC PIPE CO. Main and Howards Sts., San Francisco

C&S AXLE & GREASE LARGE HANDY BUCKET SMALL CAN WHITTIER COBURN CO S.F SOLE MFRS.

WHY PAY $300 Per 1000 for Burbank's Spineless Cactus when you can buy his BEST FORAGE for $200 at J. L. ATWATERS' NURSERY Route 2, San Gabriel, California

For Sale:- REGISTERED JERSEY CATTLE. Both Island and American types. J.D. Huston, Farm address, Imperial, Cal. Home address, 1725 W. Adams Los Angeles

Thoroughbred Poland China Swine
High Grade Stock of Best Strains.
Young Stock For Sale.
M. BASSETT Hanford, Cal.

Live Stock and Dairy

ALFALFA TEA

We recently had request from a subscriber for information as to the use of alfalfa tea to feed pigs. He referred to the fact that he had seen an article by a Dr. Suddith in which it was claimed that the tea made by steeping alfalfa hay was recommended as practically equal to or better than skim milk for raising pigs and calves; also that the residue after the steeping of the tea was even more nutritious than the original alfalfa hay. This looked a little bit too good to be true, and in our bibliography of alfalfa we could find nothing referring to such authority on alfalfa. However, we took the matter up with Professor Woll of our own state university and with the Wyoming and Idaho state experiment stations. We give first Professor Woll's reply to our request for information:

"I know of Dr. Suddith's experiments with preparing alfalfa for hogs, through hearsay only. There appeared an article on this method of feeding in the Saturday Evening Post about two years ago, written in the usual style of that paper, in which some very wonderful results were obtained in feeding alfalfa tea to hogs in place of skimmilk. I did not see the article myself, but I understood that he claimed that the alfalfa left as residue in making the hay-tea was richer in digestible protein than ordinary alfalfa hay. I am sorry that I cannot give you the exact reference, nor do I know Dr. Suddith's initials or address. It is possible that Prof. W. J. Spillman of the bureau of plant industry, U. S. department of agriculture, Washington, D. C., can give you the information desired, as he has a very extensive acquaintance in the western states and keeps in close touch with the work relative to alfalfa culture."

From A. D. Faville, animal husbandman at the state agricultural college at Laramie, Wyoming, we received the following letter:

"In reply to your letter of a recent date I would say that the Dr. Suddith to whom you refer is a Montana man, and the article you have in mind is probably the one which appeared in the Saturday Evening Post some time ago. This article was written in a popular style without very careful regard for facts. Alfalfa tea was the thing recommended in this article, and great things were claimed for it. I have tested the clear tea out and find that it has very little feed value, not enough to pay for the trouble of preparing it. In this article cited many other things were mixed with the tea, and apparently the grounds were utilized, so that we had no way of determining what really constituted the valuable materials. Alfalfa meal mixed with grain makes a satisfactory ration. The amount used will depend on the length of time one wishes to carry the pigs. Larger amounts of alfalfa mean slower fattening. Hogs will use alfalfa hay to advantage and they will take it out of most any ordinary rack that is built so that they can get the contents easily. I doubt whether it would pay to grind the alfalfa under ordinary conditions unless it seems desirable to mix the hay with the grain ration, and cutting may be resorted to for this use."

E. J. Iddings, animal husbandman at the Idaho agricultural experimental station at Moscow, writes:

"I know of no experiments conducted in this state by Dr. Suddith on the best method of preparing alfalfa for hogs. Considerably over a year ago there was some discussion regarding a report supposed to have been sent out by Dr. Suddith of Montana claiming very remarkable results from feeding alfalfa tea to hogs. The more practical hog men at that time looked upon the report as entitled at least to doubt; and, since the feeding of tea seems to have advanced no further, and nothing more is heard of the matter, I take it for granted that the doctor was either misquoted or sent out information that was not accurate.

"Alfalfa hay may be fed to hogs either whole, cut into short lengths, or ground into meal. The most reliable and accurate information concerning the feeding of alfalfa to hogs that I am acquainted with has been obtained by experiment at the Nebraska experiment station. As a result of more than five years' tests, with accurate records kept and the turning off of a very large number of hogs, the results of these experiments summarized by the Nebraska station indicate that the feeding of a fine quality of alfalfa hay whole in a rack is, under average conditions, the most economical way of feeding it. There are increased returns from cutting it into short lengths; but not more than enough to pay for the cost of the operation. The grinding of alfalfa into meal, on account of the rather expensive process, results in no advantage, and in most cases in a loss as compared with the feeding of alfalfa whole. These results have for the most part been carried on in the western part of the state, where an excellent quality of alfalfa is grown, and I take it, they are applicable to Idaho, neighboring states, and California.

"We have done some feeding of alfalfa in this state experimentally, and in addition, a very large number of our hogmen make a wide use of alfalfa hay in hog feeding. Our results here would tend to support the Nebraska position, although some farmers seem to think there is a wonderful advantage from grinding the alfalfa into meal."

MORE LIVE STOCK PER ACRE

Written for the California Cultivator
By Sacramento Valley Contributor

There is a wide difference this year between the price of feed (alfalfa and grain) and finished meat products. Alfalfa and barley are abundant and cheap everywhere, particularly in the great interior valley, and every pound of this feed should be made into meat, milk and eggs to cut down the imports of these products into the state.

In the Sacramento and San Joaquin Valleys we have a territory that could and should produce more live stock products per acre of developed land than any other district of its size in the world, and some day it will do it. The reason for this is the great quantity of rich feed that can be produced per acre and the favorable climatic conditions. The claim that on heavy land feed yard conditions are bad during wet weather, is true, unless floored yards are provided to keep stock out of the mud, but this expense is nothing as compared with the cold winter weather stock feeders must contend with in the east. Cold weather costs feed for keeping the animal warm that might otherwise make gains, while feeding floors or sheds are a comparatively permanent improvement that costs very little per animal fed when a long period of years is considered.

We must breed and grow more stock on the farms of the valleys. The supply of feed on the ranges is too uncertain to make range cattle and sheep for feeders a dependable supply for the consumption of valley alfalfa and grain. One or two years of drouth like 1912-1913 tends to create a shortage of stock cattle and sheep that makes a big surplus of feed, such as there is now. Increasing consumption of alfalfa is another factor that makes a more constant supply of feeder stock necessary.

We have this year 1,000,000 tons of barley, the biggest crop ever grown in the state. In 1907 the previous maximum was reached with 739,000 tons. An indication of the increase over last year is that over 20,000 tons will be shipped from Colusa, in Colusa County, this year, while the tonnage carried on the whole upper Sacramento river last year was only 35,000 tons. We also have the greatest alfalfa crop in the history of the state, and probably the largest corn crop.

The man who has a lot of hogs or cattle that he has raised, or cattle or sheep or hogs that he has bought at reasonable prices, should be able to make a nice profit feeding grain and hay at present prices.

WHITE FACE HORSES

We may go a century from childhood and still find truth in the old nursery rhyme. We find evidence of it here every day. Not long since the following came from a reader who does not want his name printed:

"I want to enter a protest against the horse pictures you have been publishing in your paper. White-faced horses are not desirable; a big per cent are soft horses. The Clydesdale colt, pictured recently in the R. N. Y., valued at $5,000, is worth about one per cent of that sum. These big, soft horses are many of them worn out at 12 years of age. There is one thing to be said in their favor; their bones are big and they are worth more for fertilizer and knife handles when no longer useful. Were I the editor of The R. N. Y., no white-faced horse pictures would be printed. Do not lend your influence in this direction; bar out such pictures along with the fakes not for publication."

We find that what various gentlemen would do if they were editor to be among the wonders of the world. We have a brewer who protests at every reference to temperance, and many who want three pages on prohibition in every issue. At a fruit growers' meeting a well-known farmer cursed the dairy cow and never wanted to hear of her again. On the same day another man said he wanted nothing but cow. One man said his wife disliked The R. N. Y. because it contained the picture of a hog. Another woman said the hog had paid the mortgage on her farm. The fact sems to be that if all these would-be editors had their way there would be nothing at all printed in the paper. Our people are generally broad-minded and fair, ready to think and conduct a fair discusion. As for white-faced horses, we have three on the farm that are very satisfactory. Here in New York, out of about 500 colored horses examined, over 400 had a star, a stripe or a full white face. On referring the matter to Dr. Alexander, we received the following:

CANNED CORN FOR CATTLE

Two months on board ship without green food will give men the scurvy. We avoid disease on land in the winter time by eating canned vegetables.

Since a partially green diet is so important, physiologically, is it surprising that domestic animals thrive so much better when we can the growing crops of summer for their winter feed?

The first man who ever put up silage for his cows reasoned that if the fresh green grasses and fodders of spring would increase the flow of milk so remarkably, the same green things fed in the winter should maintain the increased yield. His faith was amply rewarded—and today we have a silo on almost every modern farm.

Since time immemorial white-faced, "bald" or "blazed" horses have been popular in Europe. It is characteristic of the heavy draft stock of Great Britain, founded with blood of the ancient "black horse" of Flanders, and it no doubt is the origin of the "star" or "stripe and "snip" in horses of other breeds, notably the Percheron. All of the farm work and heavy hauling on the streets, and about the railroad stations and docks of England and Scotland, and most of the work of the same sort in Canada, is done by grand draft horses of this origin. The accusation of your correspondent is unjust, prejudiced and not based upon intimate knowledge of the facts. A few hours upon a street corner in Toronto, Melbourne, Glasgow, Liverpool, London r Dublin would be likely to change his opinions.—Rural New Yorker.

While a reporter was telephoning his story from Sing Sing early one morning, a convict hammering on the floor made it hard for the reporter to hear. "Would you mind stopping for a few minutes?" asked the reporter.

"All right, boss," said the convict, "go to it. I got 20 years to finish this job."—F. P. A., in New York Tribune.

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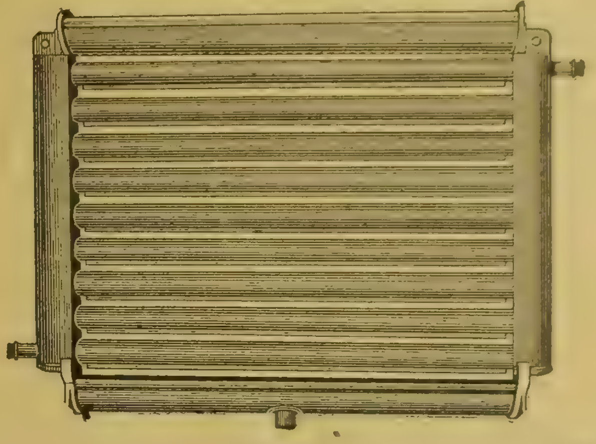
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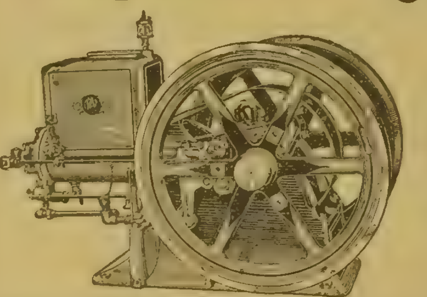

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Bees and Their Care

ALFALFA SEED AND BEES.

In certain locations, as in northern Montana, bees are very scarce, but alfalfa will often produce good crops of seed without their aid. A crop of alfalfa seed is never obtained except when the flowers have been "tripped," which term describes the snapping back of a part of the flower in such a way as to deposit pollen on the stigma. Production of seed usually results from this action. Bees in search of honey or pollen "trip" some of the flowers, but there are two other ways in which the action may be performed. In some cases the flower will "trip" itself automatically (as it does in Montana) if the climatic conditions are satisfactory, or the flowers may be "tripped" artificially by human agency.

Of the three agencies that may "trip" the alfalfa flower only the insect naturally carries the pollen from flower to flower. As pods form in artificially tripped flowers it is evident that flowers do not necessarily need pollen from others in order to become fertilized. Moderately warm weather interspersed with cool nights is a condition that seems peculiarly favorable in aiding flowers to "trip" themselves. When the weather cools off the flowers do not "trip" so readily.

Investigations have shown, however, that pollen brought from other flowers will produce more pods than does the flower that is self fertilized. Thirty per cent of the flowers fertilized with their own pollen produce pods, while 46 per cent fertilized with pollen from other plants produce pods. In the former case the pods each contain an average of 1.4 seeds, while in the latter they contain 2.4 seeds.

Honey Bee of Little Aid.

Investigations of the United States department of agriculture have shown that a mistaken notion has been held regarding the kinds of bees that aid alfalfa seeding. While "leaf cutter" bees will "trip" about 90 per cent of the flowers they visit and bumble bees about 50 per cent, honey bees "trip" less than five per cent. Even though a honey bee trip only five per cent of the flowers it visits the great number of such bees that can be kept on an alfalfa field taken in connection with their activity compensates for the low efficiency of each bee.

The wild bees that are most efficient in tripping do not store up honey of commercial value, nor is there any way known of holding them permanently in any locality.

Certain investigators have thought that some species of bee from the native land of alfalfa might prove more valuable than others. If such could be found and introduced the yield of alfalfa seed might be materially increased. There are so many different kinds of bees in different parts of the world that there is considerable room for experiment.

The principal growers of American alfalfa seed are located in eastern Colorado, Kansas, Nebraska, Utah and Montana. In the east the market for alfalfa hay is so attractive that there is little interest in growing alfalfa seed. However, there is a good field in certain states for increased production of seed, as there are still heavy importations of inferior seed from foreign countries. Over $676,000 worth of seed was imported in 1913.

OPERATING THE BEE SMOKER

In using the smoker for quieting the bees, fuel is needed that will furnish plenty of smoke and will at the same time last a long time. It is very exasperating to say the least, to set your smoker down and then find that the fire has gone out and there is no smoke just when you need it most. One of the best materials for fuel that I know of is an old gunny-sack. If this is just a little damp it makes a lot of smoke and burns slowly. Moreover, it is very convenient to handle when prepared in the proper way.

Roll the sack into a long roll and tie strings about every four inches beginning two inches from the end. Then take a sharp hatchet and chop the sack into sections, cutting between the strings. This gives you sections just about the right size to fill the smoker and in a form that is easily handled. One of these will furnish plenty of smoke for a long time. Usually one is enough for all of the work with one hive or more. If a gunny-sack is not to be had, any old cloth of similar texture may be made to serve.—Farm Stock and Home.

PRODUCTIVE ORCHARDING.

Productive Orcharding, Modern Methods of Growing and Marketing Fruit, by Fred C. Sears, M. S., Kansas state agricultural college, published by J. B. Lippincott Company, Philadelphia, at $1.50, net. The Cultivator will be glad to secure the book for its subscribers at the above price or, including a year's subscription to the Cultivator, at $2.35.

This book is one of Lippincott's Farm Manual Series, which is edited by Kary C. Davis. It is an exceedingly well printed and bound volume of 316 pages, illustrated with many copper plate engravings. There are 22 chapters touching upon: The Outlook for Orcharding, Orchard Lands, Selecting Varieties and Buying Nursery Stock, Establishing the Orchard, Cropping the Orchard, Orchard Culture, Orchard Implements, Fertilizers, Cover Crops, Pruning, Orchard Insects, Diseases of Fruit Trees, Spraying Apparatus, Spraying Materials, The Spraying Campaign, Renovating Old Orchards, Picking and Handling Fruit, Storing Fruit, Grading and Packing, Marketing, Advertising, Laws affecting Orcharding.

"If the agricultural history of the twentieth century is ever written the writer believes that one of the most significent features of such a history will be the account of the great interest in orcharding which developed during the latter part of the first decade of the century. That interest is still at its height. Men from all walks of life are turning toward orcharding as the one branch of farming in which they would like to engage. Wealthy men are setting out orchards (and commercial orchards) on their estates, farmers in orchard sections are enlarging their fruit plantations, while bank clerks, insurance men, and retired ministers are either investing their savings in small farms which are to be set out to fruit trees, or have bought an interest in some development scheme in the West. No wonder that there is a shaking of heads among the conservative element of our fruit growers and a wondering as to what the outcome will be. No wonder that even the most enthusiastic advocates of orcharding are speculating as to whether it may not be overdone."

While the book is written from the standpoint of an orchardist whose experience has been entirely in the East, the Pacific Coast orchardist will find many suggestions of value. Especially valuable are the chapters on packing and marketing.

Profit in the Poultry Yard

REARING LATE HATCHED CHICKS

Written for the California Cultivator
By E. E. Cauble.

In past years most poultry men, small and large, have bent all their efforts to raising poultry in February, March and the first part of April. And this placed the entire output of broilers and fryers on the market almost in a single month, thereby congesting the market and making this branch of the business less profitable. Now we are learning better methods of handling chicks, also of marketing, and it has made possible the profitable raising of chicks during the summer months—May, June and July.

The first thing to consider in raising chicks in summer is the condition of the parent stock. After the hens have laid during the winter and spring their organs of reproduction are somewhat impaired and sometimes the one that cares for them gets a little negligent as the season rolls on, and doesn't provide such a variety of feed — allows the shell, charcoal and grit boxes to remain empty part of the time, or does not supply succulent greens, etc. Renew your energy, give your hens more variety; give them appetizing mashes and if necessary a little tonic twice weekly—they need it, just as you do sometimes. Clean up the yards and houses, spray the nests thoroughly early in the morning. Don't be stingy with the lice paint; saturate the nest material till the hen's feathers underneath are colored and your louse troubles will soon end, your hens will lay and the eggs will hatch strong chicks that live and grow, but you can't have fertile eggs, lice and mites at the same time.

As the season grows later our methods of handling the incubators should also vary. If we should run the machines at the same temperature in May and June as in February and March and not cool and air the eggs any more than for the early months, our chicks would mostly die in the shell and those that did get out would hardly be fit to raise. We would run the incubators at 102 and 103 degrees in the early months, but for May, June and July, start at not over 101 degrees, increasing to 102 degrees the last week, and at hatching time you will have a hard time to hold it anywhere but 103 or 104 degrees. Cool the eggs twice daily, not long the first week, as they cool rapidly, but the second week, 30 minutes to an hour, and the last week half of the time would hardly hurt them. They must feel cold to the hands before they are returned to the machine—the doors of the machine should be left open during the cooling in hot weather. Early in the morning and late after sundown are best for cooling the eggs, as the air contains more moisture. A damp cloth or sponge should be kept in the machine the first five days, then returned when the eggs begin to pip.

Caring for the Chicks.

The little chicks should be kept in a dark warm place at least 24 hours after all are hatched, with absolutely nothing to eat or drink and as quiet as possible.

As to brooders, I prefer a hot water system for summer; it gives a soft, damp heat better adapted for hot dry weather, although fireless brooders may be used successfully, putting only about 30 or 40 chicks to a brooder or hover 18 inches square.

Most any kind of a brooder will do, providing it has plenty of fresh air and the chicks are not allowed to remain out too long and get cold. Watch them. See that they all get in at the proper time for a few days. The best nursery feed for the first few days is made from bran, bread crumbs and boiled egg, with finely pulverized charcoal. Knead the whole mixture together till it becomes moist like freshly baked bread, and feed nothing but this on clean boards or fresh, damp earth five or six times daily, just a little at a time. Use a very little sand or fine grit scattered with feed. Do not allow chicks access to quantities of sand when they are first fed, as they do not distinguish between sand and feed at first, and being eager to pick up everything, will eat too much sand and die with inflammation or packed bowels and you will think it white diarrhea.

On the second day a little bran in a shallow dish may be given. Third day add a little shorts to bran and scatter a small quantity of commercial chick feed where they can hunt for it, for next few days. Add fine-ground bone (small quantity) to mash of bran and shorts, then a little blood meal or fine meat scraps and discontinue the boiled egg. Give a little greens to pick at.

Here I would like to say a few words in regard to disease and remedies. Chickens are susceptible to as many or more diseases than the human being, and if you don't feel just right you consult your physician or get some good, reliable family medicine and try to correct the ailment at once. So it is with chicks or old fowls. If you would be successful you must be prepared to combat their ailments.

There are many first-class preparations on the market that are reliable and sure if used rightly, and I would advise keeping a few of the remedies on hand, such as white diarrhea cure, which should be used in raising chicks in hot weather, not altogether as a cure, but as a preventive, given twice a week.

A good tonic or conditioner is also essential. Chicks get out of condition and need something to tone up their digestion.

Second week—Add a little finely chopped green onions and green alfalfa to the moist mash. This mash should now be made of two parts bran, one part shorts, handful each of meat scrap, ground bone, commercial chick feed, ground charcoal, chopped alfalfa and onions about 20 per cent. Slightly wet the green stuff and work the mash well into it. This should be fed twice daily, morning and noon. Keep dry mash before them and feed commercial chick feed twice daily, giving plenty at evening. Keep charcoal and grit before them at all times. Give fresh water at least three times a day.

Third week—Mash as above, adding more meat scraps and making the grain ration about half cracked corn and wheat with the commercial chick feed. Add more chopped alfalfa to the mash. If green alfalfa cannot be had for these mashes, scald alfalfa meal and let stand a few minutes, using same amount. Scatter all grain and chick feed in straw litter. Give enough at evening so they may scratch the balance up first thing in morning. When the chicks are four weeks old they should be well feathered and ready to remove to open-front houses and fed just about the same as for laying hens. Plenty of good, clean straw should be placed on the floor of the house four to six inches deep; if it contains grain, all the better.

For chicks of this age and younger I feed all mashes in open troughs about two inches deep, covered with inch mesh netting. Troughs should be 12 inches wide, about six feet long for 50 chickens. This allows plenty of room without crowding, which is very essential, else the smaller and weaker ones will be crowded and stunted.

From four weeks on I feed the following rations and have had extremely fine results with late-hatched chicks.

For morning and noon feed mash as follows: Equal parts bran and shorts, five per cent fish meal, five per cent beef scrap, five per cent rolled barley and cracked corn, little charcoal, half the above quantity of finely cut green alfalfa (or alfalfa meal scalded). Pour water on the cut alfalfa till thoroughly wet, then add all together and mix well, adding a little salt. Feed all they will eat twice daily. After a few days feeding this mash the chicks become very greedy and their appetites are enormous; you can see them grow day by day.

Feed grain at night.

This mash is extra good for laying hens and will keep them in prime condition. It is a cheap mash also, which adds to its value.

In conclusion I wish to mention a few facts over again, for sometimes we cannot have things impressed on our minds too often. First of all is this: In caring for and feeding chicks and hens, adopt some system best suited to what you have at hand and stay with it with regularity — don't change unless you do it gradually.

Don't feed your little chicks in a lot of dry dust and call it scratching material—or they will die sure—better wet the runs down daily—they will do better.

Try to teach them to go on the perches at six weeks and separate the sexes by eight weeks. Don't overcrowd. Crowding too many little chicks into a brooder or run in hot weather is very serious and the one thing above all else that must be avoided. This saps the very life from them and is the main cause of white diarrhoea and other diseases.

At from four to six weeks of age give chicks as much variety of feeds as possible, as they are very likely to have liver trouble if fed too heavy diet or one too rich in fat-producing elements. Give more greens, bran and bulky foods, and here is where a good tonic works wonders in the morning mash. They are now starting to grow their full coat of feathers and at the same time build up a strong growth of bone and muscle. This requires much discretion in handling. They must have an extra amount of feed and yet it must not be too rich or liver trouble will result. This applies to chicks kept in limited quarters; chicks on free range may be allowed to go to corn and wheat in sacks without danger, as they hunt their own variety as needed or relished.

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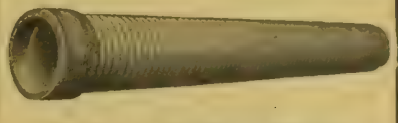

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son for a good many years and have had as good success as with the earlier broods. I have also watched results closely and have found that as a rule these later pullets lay more eggs in a year's time than very early pullets. Early pullets moult in the fall, shortening the laying period by at least two months; late pullets have a full year of laying before any moulting. There is another point or two in favor of later hatched chicks. They run largely to pullets, while early chicks run more to cockerels as a rule. Later hatched birds are truer tc color and shape. For instance, we take the White Wyandotte. Hatched early, it is liable to be too leggy, show more brassy, etc., while late-hatched birds are blocky, true Wyandotte type, and as a rule pure white and better layers, but not quite so large till after the moult the following year.

This is now June and my brooders have just been filled with chicks and they look very promising. By extreme watchfulness, scanty feeding for the first few days, spraying and disinfecting their quarters often, keeping their runs wet down during hottest days and attending closely to many other little details like scalding and cleaning fountains and troughs, keeping air-slacked lime sprinkled near feed troughs and fountains, dusting sulphur in feed troughs occasionally, etc., am expecting to produce some choice laying stock for next season.

It is somewhat uncomfortable and a little disagreeable to get out in this hot weather and look after chickens, but let us roll up our sleeves and bend one desperate effort to supply the demand for poultry and eggs.

Questions and Answers

THE EDITOR AND STAFF·

Questions to be answered in this department should be received at this office one week before reply is expected. Write plainly on one side of the paper and sign full name and address. Unsigned communications receive no attention.

Grasshopper Poison.

In the Cultivator of May 14, Mr. J. W. Mills writes on grasshopper control. I tried to dissolve the arsenic as he directs, using one pound white arsenic, one pound sal soda and five gallons water, boiling about 15 minutes, and there was a white sediment on the bottom. The water here is rather hard, perhaps I should have used more sal soda. I put the arsenic and soda in the cold water. Would be much obliged if you can help me out.—Subscriber, Woodland.

Boil the mixture for half an hour or more. There is always a little arsenic left in the bottom, and by draining off the liquid and boiling the settlings in fresh water with more lye, it can all be dissolved.—J. W. M.

Aloes for Squash Bugs

We notice inquiry regarding control of squash bugs in the last issue of the Cultivator. I find by dissolving aloes in wood alcohol until saturated, then reducing with water, say 12 quarts to one quart of the alcohol and aloes solution, and spraying any kind of vines it will drive the bugs away. It is especially effective for spraying corn just as the silk is starting. It will keep away the corn ear worm almost invariably.—L. L. Whiting, Winchester.

Stable Manure

Should stable manure be plowed under immediately after spreading or allowed to remain on top of the soil?—Subscriber, Baldwin Park.

Perhaps the ideal way would be the immediate plowing under, but in practice there are difficulties which might prevent and we do not think there would be any great loss, at least the loss would not be so great as if the manure were allowed to remain in a pile where it is liable to fire-fang and waste the nitrogen through evaporation. It is the general verdict that where spread over the surface and allowed to dry in the sun the waste is very slight.

Some Bugs

I am sending under other cover some bugs. What are they? I find them feeding on verbenas.—Subscriber, Santa Cruz.

Our Santa Cruz subscriber has unearthed a bug which seems to be a new one in this section. It has been submitted to various entomologists, the last word coming back from the state horticultural commission that these bugs were not yet named. They are long black beetles, somewhat similar to the common click beetle, but this they are not and we will continue the investigation until they are named.

Dexter Cattle

Where can I get information regarding Dexter cattle? This is the breed which was spoken of in the Cultivator of January 11, 1912.—Subscriber, Little Rock.

We believe there are no Dexters in California, but will ask our subscribers to give information as to any one who is breeding them.

Nematodes

A subscriber's request for information regarding nematodes and their control was referred to Mr. E. E. Thomas of the citrus experiment station, and he answers:

"At present there is no remedy known that will completely eradicate the citrus nematode, in fact that is the greatest problem before us and a large number of experiments are under way, the object of which is the eradication of this pest, but a sufficient length of time has not elapsed to draw conclusions as to the practical outcome. A few facts are known, however, which will help in its eradication. When a citrus tree is infested with the citrus nematode the whole root system may be attacked. This is quite possible from the fact that the citrus nematode has been found on citrus roots at a depth of 12 feet and if it is found at this depth there is no reason why it should not be found on the small rootlets of any other part of the root system. Owing to this fact, it is very hard to find a practical method for completely freeing the soil of the nematode, when once it is established on the citrus trees. All forms of the nematode, the egg, larva and adult are very quickly killed at a temperature of 140 degrees F. and if a large percentage of the infested soil should be heated to this temperature the number of nematodes would be greatly reduced. Carbon bisulphide might also be employed to reduce the number of this pest, but it is hardly possible that this method would completely eradicate them. Carbon bisulphide should be applied at the rate of from four to six ounces to the square yard of surface in six to nine holes per square yard. We hope to be able to give more information in regard to this subject in the future."

Tomatoes Dropping

What is the cause of tomato bloom falling? The vines are thrifty and have been in bloom for several weeks with but little fruit. — Subscriber, Dixon.

In California Experiment Station Bulletin No. 239, written by Stanley S. Rogers, this trouble is treated as follows: "Tomato growers are often troubled by the blossoms dropping from the vines, and, although the plants grow luxuriantly, very little fruit sets. This infertile condition of the blossoms is generally due either to unfavorable climatic conditions at the time the blossoms are forming, or to the character of the soil. Any weather condition, such as rain, cold or heavy fog, which interferes with the scattering of the pollen seriously affects the setting of the fruit. If the blossoms open during extremely hot, dry weather they are liable to burn. Another common cause for the failure to set fruit is an over-supply of nitrogen in the soil. This may be a natural condition, or may be due to heavy application of stable manure or commercial nitrogenous fertilizers. Over-irrigation when the blossoms are forming often causes them to drop. If unfavorable weather conditions cause the blossoms to fall, the time of planting might be changed. Unless the soil is very deficient in nitrogen it is generally better to apply stable manure at least one year before growing tomatoes. Soil which is naturally too rich in nitrogen for the fruit to set well should be avoided. Do not over-irrigate when the blossoms are opening."

Alfalfa Hay for Hogs

Have read a good deal about hogs thriving on alfalfa hay. My neighbors say that hogs will not eat hay of any kind. Can you tell me whether hogs will live and do well on alfalfa hay when other feed is short? Also, will you give me information about alfalfa meal? Is there a small mill in the market for making the meal?—Subscriber, Gilroy.

The inquirer's neighbors certainly have another long guess coming. Alfalfa hay is one of the best of hog feeds. Henry's Feeds and Feeding says: "Cottrell reports that brood sows which lived through the winter on alfalfa hay with no grain farrowed large, healthy litters of pigs in the spring. Numerous trials at the western stations have established the value and importance of a limited amount of alfalfa hay in the ration of fattening swine." Again, after giving a table showing gains of hogs fed on different rations we quote the following paragraph: "The table shows the great value for swine fattening of alfalfa hay when rightly combined with corn. When the ration consisted of one-fourth alfalfa hay, that amount of hay was worth its weight of cornmeal and was superior to the same weight of wheat bran. When alfalfa hay formed half the ration the returns were less satisfactory, showing that too much roughage was being fed. Ground alfalfa hay showed no superiority over cut hay. The farmer desirous of reducing the cost of producing pork should carefully study this experiment." Alfalfa meal does not increase the amount of nourishment in the hay, but does save the wastes, that is, the coarser parts which stock will often reject are made more digestible and more palatable. Small mills are manufactured for making alfalfa meal.

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Veterinary

Answers in this column by Dr. Wm. Petrie, 2714 South Harvard Blvd., Los Angeles, are without charge. For immediate mail answer remit $1.00. In writing questions give full symptoms or particulars of injury of animal.

Abscess

I have a colt three months old. About six weeks ago a swelling appeared on the outside of the right knee. It is about the size of a small teacup and is soft at the base like a windpuff. It don't seem to hurt him. I rubbed it with liniment, but it does no good. What is it and is there any cure?—Subscriber, Wasco.

It is probably one of those enlargements that is filled with serum and was caused by a bruise. If left it will become organized into a fibrous tumor that will be difficult to remove. The best treatment for such conditions is to make a large opening into it and dress the cavity with an antiseptic solution once a day until healed. Use bichloride of mercury, one part to 1000 of water and after washing out the cavity with it soak some surgeon's cotton with the solution and bind it on to the wound with a bandage. When healed it should be as good as ever. If you are not familiar with such things you had better get a veterinarian to do it for you.

Effect of Bee Stings

Will bee stings affect the flow of milk in a cow? I have a cow that was badly stung by bees nearly two months before she came fresh; so badly that it nearly killed her. For a month after she was fresh she gave a good flow of milk, but then commenced to gradually decrease and now, after another month, gives only about half the amount.—Subscriber, Ventura.

If she gave the usual amount of milk for a month after being fresh you cannot attribute the falling off now to the bee stings. It may be indigestion. Try giving her the following, which you can get of your druggist: Epsom salts, three pounds; common salt, one pound; bicarbonate of soda, half a pound, and nux vomica, four ounces. Mix and give a handful once a day. This should last at least three weeks.

Bloody Milk

I have a cow that has been milking for four months and now is giving about four gallons of milk a day. One of her teats gives bloody milk. This is not unusual at calving time, but should stop soon. Could it be a tubercle? The cow is in good shape and is on alfalfa pasture.—Subscriber, Wasco.

Yes, it may be a tubercle in the udder that is causing the bloody milk, but probably not, as the flow is keeping up so well. It might be well to have her tested for tuberculosis, but if she does not react, then would advise giving her the following: Epsom salts, two pounds; common salt, one pound; bicarbonate of soda, eight ounces and ground gentian, four ounces. Mix and give a handful once a day.

Arthur Shroeder, secretary of the San Mateo County Poultry Association, writes of the next quarterly meeting of that association which will be held at the Union Hotel, San Mateo on Tuesday, August 4, at 8 p. m.

MONEY MAKING LITTLE LINERS

In this department we will insert your advertisement under a classified head for 12 cents per line per issue. No ad accepted for less than 3 lines. Our classified columns are the clearing house for our many thousand readers.

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SECOND HAND WINDMILLS, TANKS, PIPE PUMPS ENGINES
RANCH AND POTATO MACHINERY

New 1000 gal. galzanized tanks, $13.50; 2000, $29.50; 8 ft. windmills, $29.50; 10 ft., $29.50; 12 ft., $45.00.

HAY MACHINERY

La Dow baler, $95.00; Whitman Power baler, binders, headers.

POTATO MACHINERY

Potato diggers, planters, cutters, cultivators, harrows, plows, Holt tractor, sprayers, sundries.

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Eight H. P. Stearns, $135.00; 20 H. P. Stearns, $195.00; 28 Lambert, $295.00; 35, $350.00; Ames double acting, deep well pump, $135.00; single acting pumps, $20.00 to $60.00. Centrifugal pumps half price.

SUNDRIES

Bankrupt sale new stocks and dies half price; gears, large pipe fittings, pulleys, belt.

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Biggest little Pumping Outfit ever sold at the price, 2½ H. P. horizontal engine, upright jack and belt, new, $98.00. Capacity 1200 gallons, 100 feet. Demmitt Co., upstairs, 120 N. Main, Los Angeles.

We have pumps, motors and engines of all sizes and for all conditions, which we will sell or rent. If you want a complete plant or any part, write us your needs and get our prices. Can give you special low price on engine and automobile oil, also belting Machinery & Motor Exchange, 756-768 S. Alameda St., Los Angeles, Cal. Main 6382.

For Sale—Used and new gas engines, 2 H.p. up, rebuilt and fitted with modern equipment. 22 years' experience enables us to repair and rebuild gas engines correctly. Get our prices. Lloyd, 806 N. Main, Los Angeles.

LIVE STOCK

Ohio Improved Chester White (O. I. C.)—Four boars, March farrow left; 8 sows, June farrow, ready next month. Selected sows bred for October farrow; pigs ready to ship December 1st. Three herd boars in use. All stock cholera immune. Booking orders now. Crated and registered free. C. B. Cunningham, Mills, Sacramento County, Cal.

Grape Wild Farm Thoroughbreds—Guernsey Bulls of A. R. Breeding. BERKSHIRE HOGS. Finest herd in the state. All ages for sale. A. B. Humphrey, proprietor, Mayhews, Sacramento Co., California.

Thoroughbred Berkshire Boars of all ages from developed and large-boned hogs. Riccomi Bros., Mountain View, Cal.

For Sale—Young, registered Berkshire boars; fine, strong stock, weighing about 150 lbs. Stanislaus Ranch Co., R.F.D. No. 1, Crows Landing, Calif.

Glenview Poland China—Stock for sale. Chas. R. Hanna, R. F. D. No. 3, Riverside, Cal.

N. H. Locke Co., Lockeford, Cal.—Choice young Jersey bulls for sale.

TREES.

For Sale—One and two-year-old Washington Navels and Valencia Orange Trees. Eureka Lemons and Marsh seedless grapefruit, for Spring 1914 delivery. Write for prices, or call and examine stock at Morris Citrus Nurseries, Cor. Juanita and Valley Center, R. F. D., Box 34, San Dimas, Cal.

Now Is the Time to book your order for fig trees. "My specialty." $25,000. Seventeen varieties, extra fine, well rooted, straight and branched, one and two year old trees. Price list on application. C. C. Terbush, R. 2, Box 543, San Gabriel, Cal.

For Sale—50,000 Sour Orange seed bed stock, finest quality, or will let to responsible party on percentage basis; also 2000 A1 late Valencias, two years old next spring, or might exchange for Washington navels. H. H. Eshelman, Soldiers' Home, Cal.

The 1200-Acre Nursery, growers of 1500 varieties of trees and plants. OREGON NURSERY CO. Orenco, Oregon. Sales office, 522 Chamber Commerce, Los Angeles, Cal.

1000 Avocado Seedlings—Pots, also can furnish nice plants, bare root, at low price. A. A. Quint, R. D No. 2, Pasadena, Cal.

For Sale—Eureka Walnut Trees, budded on Native Black Walnuts. Choice stock. Order immediately. Don't delay. Wm. Holve, Fullerton, Cal.

Citrus Nurseries, Murphy Oil Company, East Whittier, California. Selected stock for sale; inspection invited.

You Future Nurserymen—Write for prices on special stocks of plants to start business with. Ballou's Nursery, Pasadena, Cal.

Budded Citrus Trees and seedlings at fair prices. Will take auto or land. J. P. Butler, Jr., P. O. Box 145, Lamanda Park, Cal.

SEEDS AND PLANTS

Luther Burbank Spineless Cactus (Only)—Live stock fed on this velvet cactus, grow fat; hens lay more eggs, cows give more and better milk, and horses grow sleek. Why not get a start in the best, costs no more to raise than that which they call just as good. Ten slabs for $5.00, with one fine fruiting sort free. Address or call at H. L. Bauers' Cactus Nursery, 4401 Hammell St., Los Angeles.

$ $ $ SpineleSS CactuS. All varieties Burbank's fruiting and forage plants 10c up. Plant now. Black Bros.' Nursery, 455 Lucas, Los Angeles. $ $ $

All'gator Pear Plants—Choice Avocado Seedlings from Mexican highlands, two to three feet high. 1275 South Benton Way, Los Angeles, Cal.

Berry Plants and Rhubarb. My new Berry Book ready about October will be worth sending for. Louis F. Scribner, R. F. D., Pasadena, Cal.

Special Sale—Of 5000 fine hardy Burbank Forage Cactus at $150 per 1000, being half price. J. L. Atwater Nursery, R. 2, San Gabriel, Cal.

Thornless Cactus Slabs for sale at 5 to 15 cents each. Chas. R. Hanna, R. D. No. 3, Riverside, Cal

WANTED.

Wanted—A middle aged man and wife on a small ranch—man to milk two cows, have care of poultry and vegetables and help with a few hives of bees; woman to do the house work in family of two. No neighbors, schools or church—nearest town 15 miles distant. Dr. Harold Sidebotham, St. Ynez, Cal.

Wanted—Steady position by expert in pruning and new style budding and grafting; any kind of trees or roses. Work guaranteed. Mike Detore, 138 South Los Angeles St., Los Angeles, Cal.

Wanted—Active young woman to buy interest in poultry plant at Long Beach, and assist in management. Address Cultivator Box 99.

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For Sale—Fifteen acres, two miles from Martinez, 26 miles from Oakland, opposite R. R. station, five minutes walk to school. [illegible] acres in fruit. Peaches, grapes, cots, cherries and almonds, balance truck garden. Alfalfa and hay, two wells, wind mill and two large water tanks. Water piped to house and chicken yard. Seven-room house, large barn, fruit packing shed, chicken houses, brooders, etc. Five hundred choice laying hens, [illegible] young chicks, 2 horses, 3 wagons, harness, farming vehicles, etc. Price, $8,000. This property is on main road, very conveniently situated to marketing and will increase in value; $5,000 cash, balance 7 per cent interest. Address R. C. Jones, R. F. D. No. 1, Box 35, Martinez, Cal.

For Sale—680 acres of land 40 miles from Los Angeles; Southern Pacific R. R. crosses a portion of the land; 150 acres under fence, 80 acres in crop this year, 10 acres in alfalfa; can cut from five to seven crops of alfalfa per year and will average better than one ton to the acre for each cutting; have had plenty of water on the surface up to the present time, and I have a good pumping plant that will furnish plenty of water at all times; have three good wells, house, barn and other out buildings. I will sell all or a part $25 per acre and up; one-half cash, balance 8 per cent for any reasonable time. Address J. E. Youngblood, Lang, Cal.

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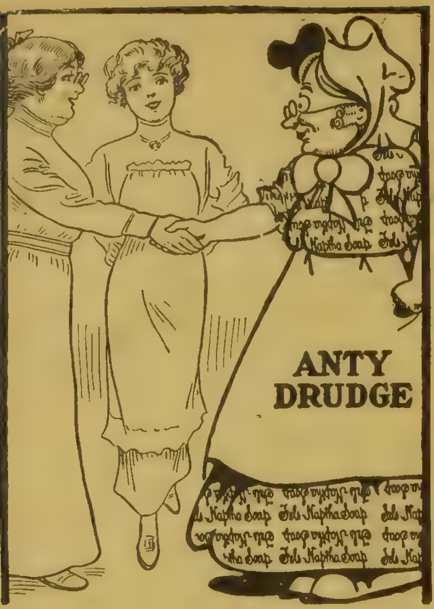

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That the wise world said,
As it shook its head,
"He'll turn to sugar before he stops."

Here a munch, there a crunch
He nibbled and nibbled, till sure enough,
Gradually—lo,
From top to toe
He stickily changed to candy stuff!

Cinnamon head, so it's said,
Marshmallow cheeks and peppermint nose,
Round sugar-plums
In place of thumbs,
Lollypop fingers and lollypop toes.

Sweet Tooth, horrified youth,
Wept that he wanted his diet plain;
So he fed and he fed
On milk and bread,
And turned to a natural boy again!
—Nancy Byrd Turner, in Youth's Companion.

MAKING JELLY AT OAK LODGE

By Mrs. Hilda B. Nielsen, Before State Fruit Growers' Convention at Davis

Having been brought up in a city, and like a city girl, I knew very little about ranching, but my husband and I both dreamed of owning a little home of our own, and we made that dream a reality as soon as possible, so that explains how we happened to buy our little ranch in the West Gold Ridge section of Sebastopol five years ago.

We chose virgin land for our new home, which meant slow progress, for every foot had to be cleared, but what pleasure we derived from planting our little home orchard and garden and putting up a few improvements as space permitted! We felt that the world was our very own.

Having both come from the city, we were very ignorant as to the quantity of berries that our family could consume. My father in the east had sent to us from a New York state nursery a box containing 1000 two-year-old currant bushes. When I received his message I wrote immediately for him to countermand the order, but it was too late as the bushes were on their way west. They arrived in excellent condition. After managing to sell a few and giving all of my friends as many as I could persuade them to take home, 700 currant bushes remained to be planted on our ranch. We hesitated about planting so many as we could not get any encouragement from the ranchers in this locality as to how the currants would grow in this section, but, rather than waste the bushes, we planted them all, and this was the foundation of our large currant patch and the beginning of my jelly industry.

After the second year I saw that we were going to have lots more currants than we could use ourselves, and as my husband hadn't planned on taking time to help harvest the crop I thought of making them into jelly and of trying to sell the jelly later, and it is because of my success in doing this that I want to tell other women of the state how they can do the same thing that I am doing.

I owe my success entirely to my method of making jelly, which I happened to get through our Ladies' Home Economics Club, which is studying agriculture and home economics under the extension department of the state college of agriculture. Our club had for study Bulletin 203 on "Canned Fruits, Preserves and Jellies," from the U. S. department of agriculture. We not only read Bulletin 203, but we studied the principles and rules underlying canning of all fruits. Never mind the recipes in the back part of the book, but study, paragraph by paragraph, sixteen pages of the bulletin. Then and only then try your preserving and jelly making, and you will be surprised to see how much more confidence you will have in the results.

Remember that Bulletin 203 may be had only by writing to your U. S. senator or representative and just asking for it. Don't hesitate to send at once for it. and then to study it when you do receive it.

I have made all kinds of jelly and canned various kinds of fruit and vegetables, but I shall only tell you how I make my currant jelly as that is my specialty, and the same methods are applicable to all kinds of jellies.

All fruits must be picked when not quite ripe to get the best grade of jelly, just before the pectin has turned into pectase. When this change has taken place, which happens when the fruit is ripe, many fruits refuse to jelly. Some fruits and berries will make jelly when just ripe, but will give a cloudy, dark colored jelly which has a very strong flavor.

I usually pick my currants in the afternoon and make the jelly the following morning. In the morning wash them thoroughly, let them drain well and put in a large pan which is covered. Allow the fruit to come to the boiling point slowly. I add no water whatever to any of my fruit or berries, simply allow the heat to bring out their own juice. When it is at the boiling point I remove from the stove and allow it to cool so that I can handle it easily.

I have used only my home kitchen and so have all of my housework to do. While the currants are gradually reaching the boiling point my housework is completed.

I put all of my fruits and berries, except plums, through the cider press to extract the juice. Small jelly presses are on the market for $4.50 and upwards, I believe. These can be used on the kitchen table, but the cider press does the work just as well. No matter how small an amount of jelly I am making I always put it through the cider press, as I find that I get all of the juice that way, and not a particle of pulp. I always put my fruit or berries in a large flour or sugar sack and fill the sack not any more than half full, tie the top securely, and then put my sack under the pressure.

While my currants are under the press I return and clean my kitchen thoroughly, which means that I make it as clean and sanitary as I possibly can.

My reason for doing this is to get rid of dust and bacteria that can easily lodge on the top of my jelly while it is cooling and later on, when the jelly is subject to the right conditions, will form mold or cause the jelly to ferment. I scrub the floor well, and then when it is all scrubbed and clean pour boiling water over the floor, so as to kill any germs which may have been carried into the house. I take a dampened, clean cloth and dust the room thoroughly. I then feel that my kitchen is clean enough to start to make my jelly.

The juice is then brought into the kitchen and poured through two flannel bags, one inside the other. These bags are suspended from a hook over my kitchen sink. The flannel seems to clarify the juice to a greater extent than any one would think it possible, had they not used the flannel bags previously.

The juice is weighed and for every pound of juice I add one pound of sugar. I never trust measuring.

I put the cold juice and the sugar on the stove and stir them well until the sugar is dissolved, let the juice come to a boil slowly and skim

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it three times before it has reached the jelly period.

Meanwhile I have been cleaning and sterilizing my jelly glasses and have my jelly gauge ready for use.

My gauge is the only secret that I really feel I possess, and it's such a great secret that I'm ready to pass it on to every woman who makes jelly. For all the work up to this point is utterly wasted, to say nothing of the fruit and sugar, if the jelly is removed from the stove too soon, or if it is is left on too long, all of the work and care you have bestowed on it, or may bestow on it, is wasted, for the juice only reaches the jelly point once and only remains there for a moment, and if you are not fortunate enough to have watched it and found it at the exact time you can never bring it back again.

My jelly gauge or syrup hydrometer registers the percentage of sugar in the juice. Baume's hydrometer is the one commonly in use. A large glass cylinder must be used to pour the liquid jelly with, and the hydrometer is dropped into the boiling juice in the glass cylinder. When the large Baume scale registers 69 per cent you then have perfect jelly, or with the small scale 29 per cent is right. The instant the correct percentage is reached push the jelly to the back of the stove and fill your glasses as soon as possible.

Allow the jelly to cool and harden in the glasses, set in large pans or trays for convenience of handling. If any dust is apt to be raised in the room cover the jelly with two thicknesses of antiseptic gauze or a towel boiled and left in the sunshine for 24 hours previous. The dust spores or bacteria must not be allowed to settle on the newly made jelly.

The jelly must be covered and put away the following morning. I have used parowax, covering the jelly perfectly with it, but I think I prefer paper circles to fit the glass, dipped in grain alcohol and laid on top of the jelly. Then put on the tin tops, which should be completely sterilized by boiling for half an hour or more, and then drying in the oven.

Jellies should be kept in a cool, dry and dark place. About 60 degrees F. is preferable. If you think of starting jelly making see that you have your market. Then make the jelly, canned fruit, preserves, pickles or jams to fill your orders. Have neat little lists to send to prospective customers and state what you have for sale. Work slowly at first and your trade surely will increase.

I might add that out of my jelly, plum butter and mixed mustard pickles, which are my specialities, have come orders for fresh ranch eggs, which I send weekly to the city, and for dressed ranch hens and fryers, which I send by parcel post.

It seems to me that the market is unlimited, and that in supplying various fresh ranch products a large and new industry is open to the rural women of today.

IDEAS FOR THE COOK

Written for the California Cultivator
By Isabel Cottle.

Breakfast

Fresh Berries Hominy
Broiled Ham French Toast
Coffee

Lunch or Supper

Cream of Asparagus Soup
Peppers Stuffed with Fish
Potato Croquettes
Watermelon Pickle Light Biscuit
Tea

Dinner

Potted Steak Corn Fritters
Fruit Salad
Blackberries with Cream
Fruit Macaroons Coffee

Potted Steak

Three pounds of round steak, six onions (medium size), one cupful of diced turnips, one cupful of tomato juice, two cupfuls of green peas, one teaspoonful of salt, one-eighth teaspoonful of pepper. Cut the steak in pieces suitable for serving, dip in flour and brown well in drippings. Add the onions, turnips, tomato juice and seasonings and barely cover with boiling water. Simmer until tender (about two and one-half hours), replenishing the water if necessary, and serve garnished with the peas.

Peppers Stuffed With Fish

Trim the stem ends of your green peppers so that they will stand up. Cut off the tips and, with a small sharp knife, extract the seeds and as much of the tough fiber as will come away. Mince white fish fine, moisten it with a white sauce, season and fill the peppers with this mixture. Put in the oven long enough to heat through and serve.

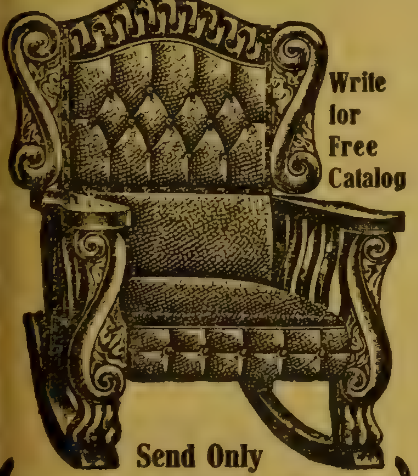
Cream of Asparagus Soup

One bunch of asparagus, one pint of water, two of milk, one slice of onion or a teaspoon of onion juice, two tablespoons of flour, two of butter and one teaspoon of salt. Cut the tender tips from the asparagus and throw them into cold water. Cut up the rest of it into small pieces and cook in a pint of water closely covered, for 30 minutes. Rub through a sieve and set the pan in another with water in it. Put the asparagus and the milk in this; cream the butter and flour together and add to them a little of the hot milk. Stir and rub till it is a paste, then add to the soup in the boiler and season. While the soup is making boil the tips of the asparagus in a little salted water, strain off the water and put them into the soup just before serving.

Fruit Macaroons

One-half cup chopped raisins, one-half cup chopped peanuts, one cup powdered sugar, one large tablespoon of flour and whites of two eggs; drop mixture on buttered paper and bake a light brown in a moderate oven.

The poor man today can buy the news of the whole world for a penny, which is something Caesar could not have done for his empire. As people were once poor, there is no poverty today.



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San Francisco--Los Angeles Produce Markets

Los Angeles Market

LOS ANGELES, July 29, 1914.

BUTTER

Very heavy arrivals of butter result in a slight weakness and slightly lower quotations, which cause the first change in weeks.

Prices to trade 4 cents above following quotations:

Creamery Extras	.24
Firsts	.21@22
Country	.19
Ladle	.19

CHEESE

Prices to trade 1 and 2 cents higher:

Eastern Daisy	.18½@19
California Fresh	.14@14½
Domestic Swiss	.20
Longhorn	.19@19½
Imported Swiss	.23@25

EGGS AND POULTRY

Receipts of local eggs very light. Market firm and quotations slightly above those of last week.

Prices to trade 3 cents higher than following quotations:

Fresh ranch, case counts	.30
Candled	.32@33
Northern Case Count	.29½
Petaluma-Santa Rosa	.30

Price to producer:

Hens, lb.	.18@19
Roosters	.7@8
Broilers	.15
Fryers	.15
Roasters	.17
Turkeys	.18@27
Ducks	.14
Geese	.14
Squabs, doz.	2.50

LIVE STOCK

The following quotations are f. o. b. Los Angeles on all stock:

Hogs, 175 to 200 lbs., per cwt.	9.25
Prime Steers	.7½
Heifers	.6¼
Calves, lb.	.8½
Sheep—	
Ewes, head	4.00
Wethers	4.25@5.00
Lambs, head	4.00

POTATOES

Wholesale selling price:

Sweets, lug	1.75
News, cwt.	1.35@1.50
Northern Burbanks, cwt.	1.45@1.55

ONIONS

Wholesale selling price:

Silver Skins	2.00
Yellow Danvers, sack	2.50
Garlic	8@10

VEGETABLES

Wholesale selling price:

Artichokes, Northern, doz.	.90@1.00
Beets, dozen	.20@25
Beans, String	.3@4
Cabbage	.65@75
Carrots, doz.	.20@25
Cauliflower, lug	1.25@1.30
Celery, doz.	.40@60
Corn, Sugar, box	.40@50
Cucumbers, lug	.35@40
Egg Plant	.5@7
Escarole, doz.	.40
Horseradish, doz.	.10@12
Leeks, doz.	.35@40
Lettuce, crate	.70@85
Mint, doz.	.25@40
Okra, lb.	.12@15
Onions, Green, doz. bunches	.15@20
Parsnips	.25@30
Peas, lb.	.4@5
Oyster Plant	.25@30
Peppers	.7@8
Chili, lb.	.4@5
Radish	.15@20
Rhubarb—	
Crimson Winter	.70@80
Spinach, doz.	.20@25
Squash—	
Summer, crate	.20@30
Crookneck	.25@35
Turnips	.30@35
Tomatoes, lug	.35@50

FRESH FRUIT

Wholesale selling price:

Apples,	
Astrachan, box	1.40@1.50
Bellflowers	1.25@1.35
Gravensteins	1.45@1.50
Apricots, lug	1.10@1.25
Berries—	
Strawberries, basket	.3@4
Raspberries	.4@6
Blackberries	.3@5
Loganberries	.5@6
Crabapples, lug	.90@1.00
Grapes—	
Malagas, crate	1.00@1.25
Black, lug	1.00@1.25
Concord, crate	1.00@1.75
Bananas	.3½@4
Cantaloupes—	
Locals, small	1.25@1.50
Local, large	2.50@2.75
Casabas, doz.	1.00@1.25
Figs, 1-layer box	.75
Nectarines, lug	.90@1.20
Pineapples, lb.	.6@7
Pears, Bartlett, box	1.50@1.75
Peaches, lug	.35@50
Plums, lug	.60@1.25
Quinces, lug	.85
Watermelons, lb.	1@1½

CITRUS FRUIT

Wholesale selling price:

Lemons	2.50@4.75
Grapefruit, Seedless	2.25@2.50
Valencias	1.75@2.25
Limes, basket	1.25

DRIED FRUITS

Wholesale prices to retailers are:

Evaporated Apples, Fcy., lb. bxs	.10@12
Apricots	.15@18½
Peaches	.6½@7½
Pears	.8@12
Nectarines	.12½
Prunes	.6@17
Plums	.10

NUTS

Prices named by California Walnut Growers' Association are:

No. 1	.17½
Budded Walnuts	.21
No. 1 Soft Shell Walnuts	.16
No. 1 Hard Shell Walnuts	.15½
No. Twos	.11½

Wholesale price:

Almonds—	
I X L	.22@23
N P U	.20@21½
Drakes, Thin Shells	.18@19
Pecans	.16
Peanuts—	
California, Raw	.6
Japan	.7½
Eastern	.7½
Pine Nuts	.15@16
Rice Corn	5.00@5.25

HONEY

Wholesale selling price:

Comb, Fancy, Water White	.15
White	.13
Light Amber	.11@12
Extr. Water White	.8
White	.7½
Light Amber	.7
Beeswax	.35

BEANS

Wholesale selling price:

Producer's price not far from one dollar under these quotations:

Limas	7.00@7.35
Lady Washington	4.60@4.75
Black Eyes	7.00
Pinks	4.25@4.50
Lentils	6.00@6.25
Small White	6.00@6.25
Garbanzos	8.50

RICE

California	3.50@4.75
Broken	3.00@3.75

HAY

Buying prices f. o. b. cars Los Angeles:

Barley	10.00@11.00
Wheat Hay	10.00@11.00
Tame Oat	11.00@13.00
Alfalfa	9.00@11.00

GRAIN

Wholesale selling prices f. o. b. Los Angeles:

Wheat	1.85
Corn	2.15
Oats, Red	2.35
Oats, White	1.60
Kaffir Corn	1.90
Millet	3.75
Popcorn	4.75@5.00
Egyptian Corn	2.20
Barley Seed	1.45
Milo Maize	2.00
Cal. Seed Oats	2.25
Sunflower Seed	5.25@5.35

FEED STUFF

Wholesale selling prices f. o. b. Los Angeles:

Bran, Heavy	1.70
Alfalfa Meal	1.05
Alfalfa Syrup, per cwt.	1.05
Beef Scraps	3.00@3.10
Beet Pulp	1.25
Cracked Corn	2.20
Feed Meal, cwt.	2.25
Cotton Seed Meal	1.85
Blood Meal	3.60@3.70
Bone Meal	2.00@2.10
Charcoal	1.90@2.00
Bone Green	1.95@2.05
Cracked Wheat	2.00
Oil Cake Meal	2.05
Fish Meal	3.15@3.25
Rolled Oats	1.65
Rolled Barley	1.20
Middlings	1.95

Do not be afraid to talk to people of the things they have made a success of. The world is a sociable world anyway and if you do happen to get a rebuff sometime just note that is the exception rather than the rule.

San Francisco Market

SAN FRANCISCO, July 28, 1914.

BUTTER

Butter dropped during the week and recovered slightly on Monday, but still stands one point below last week. Market firm.

Extras	.24
Prime Firsts	.23
Firsts	.22
Seconds	.21½

CHEESE

California Y, American	.14½@15
California Flats	.11@14
Cheddar	.20

EGGS AND POULTRY

Eggs are slightly higher. Market featureless.

Extras	.29
Firsts	.25½
Select Pullets	.24½
Hens	.17@18
Fryers	.20@22
Roosters, old	.12
Roosters, young	.23@24
Broilers	.18@20
Belgian Hares, lb.	.11@13

LIVE STOCK

San Francisco prices, gross weight:

Steers	.4@6¾
Cows and Heifers	.3@6
Calves, lb., live weight	.6@9
Hogs	.8@9
Wethers	.5@5½
Ewes	.4@4½
Milk Lambs	.6½@7½

POTATOES

Delta, Burbanks	.85@1.10
New Potatoes, lb	.1@1½
Sweets, lb.	.5@6

ONIONS

Yellow, sack	1.50@1.85
Garlic, New	.5@8

VEGETABLES

Wholesale selling price:

Beans—	
Limas, lb.	.4@5
Wax, lb.	.3@4½
Strings	.3@4½
Cabbage, cwt.	1.00@1.25
Carrots, sack	.35@50
Cauliflower, doz.	.40@70
Corn, Green, sack	1.00@1.50
Cucumbers, lug	.35@50
Deltas, lugs	.75@1.00
Egg Plant, lug	.50@65
Peas, lb.	.3@4
Peppers—	
Bell, lug	.40@50
Chili, lug	.25@35
Rhubarb, box	.60@1.00
Tomatoes, Delta, lug	.15@35

FRESH FRUIT

Apples—	
Alexander	.50@1.00
Red Astrachan, box	.50@90
White Astrachan	.50@1.00
Gravensteins	.50@1.15
Apricots, crate	.50@75
Small, lugs	.50@75
Blackberries, chest	1.25@2.00
Bananas, Hawaiian, bunch	1.25@1.75
Cantaloupes, crate	1.00@1.25
Ponies	.75@90
Delta, lug	.65@1.00
Casabas	1.00@1.25
Crabapples	.50@1.00
Figs—	
Black, box, single layer	.75@90
Black, double layer	1.50@1.75
White, box, single layer	.50
Grapes, lug	.75@1.00
Seedless	.75@1.00
Huckleberries, lb.	.10@12½
Nectarines, crate	.50@1.00
Peaches, crate	.25@40
Lugs	.25@50
Plums, crate	.25@40
Pears, box	.40@1.60
Prunes, crate	.60@1.00
Pineapples, Hawaiian	1.50@2.00
Strawberries, chest	1.75@3.50
Raspberries	5.00@7.00
Watermelons, doz.	1.25@2.00

CITRUS FRUIT

Grapefruit, Seedless	1.00@2.50
Lemons	2.75@5.50
Lemonettes	2.50@3.00
Limes, cs.	4.00@5.50
Tangerines	.75@1.25
Valencias	1.75@2.50
Mediterranean Sweets	1.00@1.50

WEATHER CONDITIONS

San Francisco, Cal., July 25, 1914.

Report from the various stations of the U. S. Weather Bureau, by Geo. H. Wilson, director, San Francisco.

	Rainfall Data.			Temperature Data.	
	Past Week.	Seasonal to Date.	Normal to Date.	Maximum.	Minimum.
Eureka	.00	.01	.11	62	48
Red Bluff	.00	.00	.00	98	62
Sacramento	.00	.00	.00	94	52
San Francisco	.00	.02	.01	64	52
San Jose	.00	.00	.00	82	52
Fresno	.00	T	.00	104	60
Independence	.06	.06	.00	92	54
San Luis Obispo	.00	.00	.01	80	52
Los Angeles	.00	.01	.00	78	58
San Diego	.00	.00	.00	70	60

T means trace.

DRIED FRUITS

Wholesale prices are:

Prunes—1913 crop, bulk basis: 30s-40s, 7½c. 40-50s, 7½c; 50-60s, 7 1-2c; 60-70s, 7½c; 70-80s, 7c; 80-90s, 5¾c; 90-100s, 5½c. The above are for both Santa Clara and outside; 1912 crop worth practically as much as the new crop; 20-30s, 15c in 25-lb. boxes.

Other Fruits. 50-lb. Boxes—	Standard	Ch.	Extra Ch.	Fcy.
Evap. Apples	....	9 c	9½c	10c
Peaches	4¾c	5 c	5¼	6c
Pears	8½c	9 c	10 c	.....

RAISINS

The following prices are f. o. b. Fresno, as given out by the Associated Raisin Company, and are effective on all sales until August 1, 1914. 1912 crop practically the same figures as the new crop. 1913 crop, per lb., effective at once: Loose Muscatels (50s), 1-crown, 4¾c; 2-crown, 5½c; 3-crown, 6c; 4-crown, 6c; Seeded, fancy, 16-oz. pkgs., 7½c; do, 12-oz., 6c; do, bulk, 6¾c; do, choice, 16-oz., 7c. do, 12-oz., 5¾c; do, bulk, 6½c; Sultanas, no stock; Thompson Seedless, unbleached, 50s, 6c; 16-oz., 7⅛c; 12-oz., 5&c; recleaned, ¼c advance; do, floated, ½c advance; London Layers, no stock. Local representatives of the Association are asking ¼c higher, while several of the large packers are quoting ⅛c under the Association's figures.

The California Associated Raisin company has issued a price list dated May 28th, on the 1914 crop.

3 Crown London Layers, 20 lb. box, $1.15. 4 Crown Cluster, $1.40. 5 Crown Dehesa Clusters, $2.00. 6 Crown Imperial Clusters, $2.50. 5-lb. boxes, 50c extra; 10-lb. boxes, 25c additional Fancy Clusters, 1-lb. cartons, 20 to the box, $1.65. Fancy Clusters, 2-lb. cartons, 12 to the box, $2. Fancy Clusters, 5-lb. cardboard cartons, 4 to the box, $2.25. Bulk Layers in 50-lb. cases, $2.50. All prices guaranteed against decline to January 1, 1915, and subject to advance without notice."

NUTS

Peanuts—	
Unpolished	.5@6
Polished	.6@6½
Japanese, Shelled	.6¼@6¾
Italian Chestnuts	.6½@7

BEANS

Wholesale selling price:

Limas	6.75@7.00
Pink	4.10@4.20
Black Eyes	7.00@7.25
Cranberry	5.75@6.00
Small White	4.85@5.50
Garbanzos	5.75@6.00
Large White	4.25@4.40
Bayou	3.00@4.00
Manchurian Cranberries	3.75@4.00
Manchurian Butters	4.60@4.80
Manchurian Speckled Bayous	3.90@4.00
Red Mexican	6.25@6.75
Horse Beans	2.00@2.25

HONEY

1913

Comb, Water White	.14@15
Amber	.12@15
Dark	.10@11
Extracted White	.7½@8
Light Amber	.6½
Dark	.3½@4
Beeswax	.27@32

HOPS

1913

Sacramento Valley	.15@16
Sonoma-Mendocino	.17@17½
Oregon Clusters	.16@17
1914 Contracts	.14@15½

HAY

Under date of July 25, Scott, Manger & Miller say:

We have received during the week ending today, 3100 tons of hay. In the various districts large offerings are freely made. Producers are endeavoring to make sales of round lots, but there has been comparatively little hay changing hands. Some of choice variety is in demand. There has been some hay moving for export account recently, which has been of advantage and has helped to work off a certain amount of stock. Alfalfa is in light demand. We quote the average wholesale prices on carload lots of new crop hay on today's market as follows:

Fancy Wheat Hay, lt. bales	11.00@12.00
No. 1 Wheat or Wheat and Oat	9.00@10.00
No. 2 Wheat or Wheat and Oat	7.00@8.50
Choice Tame Oat	10.00@11.00
Other Tame Oat	7.00@9.00
Barley	6.00@8.00
Wild Oat	6.00@8.00
Alfalfa	6.00@9.00
Stock Hay	4.50@5.00
Straw, new	.40@45

GRAIN

Wheat, Cal. Club	1.50@1.52½
Corn, Eastern Yellow, blk	1.70@171¼
Egyptian, White Corn	1.70@1.72½
Barley, Feed	.95@1.0
Oats, white	1.22½@1.2
Oats, red	1.05@1.12½
Millet	.2¼@2½
Flaxseed, lb.	.4@4½
Mustard, Brown	.4@4½
Rye	1.50@1.5
Sunflower	.4@4½
Vetch Seed	.3@3½

FEED STUFF

Alfalfa Meal, car lots	11.50@12.5
Bran, ton	25.50@26.5
Feed Cornmeal, ton	41.00@41.5
Cracked Corn	41.00@41.5
Rolled Barley, ton	21.50@22.0

Rolled Oats, ton	37.00@37.50
Middlings	32.00@33.00
Shorts	27.00@28.00
Oilcake Meal	32.00@33.50
Cocoanut Oilcake Meal	25.00@26.00
Linseed Oilcake Meal	27.00@28.00

Citrus Fruit Market

LOS ANGELES, July 29, 1914.

The general condition of the orange market is good; it is very probable, however, that within a few days an easy condition will prevail. Shipments during the last week have been over 800 cars, while normal shipments should be closer to 500. The fruit is of such excellent quality that sales are satisfactory, which tends toward freer movement of the fruit.

The general condition on the lemon market is very satisfactory, that is, west of Chicago where California lemons are being placed. The market is shot to pieces in Atlantic coast points by the immense receipts of foreign fruit. Sixteen thousand boxes sold yesterday at $1.05. This gives the importer slight leeway to make any returns to the Mediterranean producer.

Shipments.

Shipments of oranges to date from Southern California since November 1, 1914: 33,394 cars; lemons, 2.410; total, 35,804. To same late last season: Oranges, 12,372 cars; lemons, 1,875; total, 14,247. Total shipment of all citrus fruits two years ago this date, 32,130.

NEW YORK, July 27.—Twenty-seven cars Valencias, two mixed cars sold. Market is strong on Valencias. Weather fair.

VALENCIAS—	Avge.
Queen Louise, fy, Louise Villa	$3.15
Queen Louise, ch, Louise Villa	3.00
Los Palmas, San Marino Growers	3.10

ST. LOUIS, July 27. — Clear and warm. Market is steady. Five cars oranges, one car lemons sold.

VALENCIAS—	Avge.
Pico, S. T., Whittier	$2.90
Volunteer, S. A., N. Pomona	2.80
Greyhound, S. A., N. Pomona	2.70

BOSTON, July 27.—Twelve cars oranges, one car lemons sold. Clear and warm. Market is easier.

VALENCIAS—	Avge.
Sunnyheights, R. H., Redlands	$3.30
Ben Hur, R. H., Redlands	3.40
Colombo, S. T., Fullerton	3.65
Las Palmas, S. T., Fullerton	3.30
Rey, S. T., Fernando	3.80
Tunnel, S. T., Fernando	3.20
Stag, A. C. G., Azusa	3.50

PHILADELPHIA, July 27.—Five cars sold. Hot. Market strong on good stock Valencias.

VALENCIAS—	Avge.
Lincoln, A. H., Casa Blanca	$3.15
Navajo, A. H., Casa Blanca	2.90
Transcontinental, O. R., El Modena	3.45

CLEVELAND, July 27.—Five cars Vaencias, one mixed car sold. Market is easier. Weather hot.

VALENCIAS—	Avge.
Sunnyheights, R. H., Redlands	$3.20
Squirrel, A. H., Prenda	3.40

CHICAGO, July 27.—New apples, 1.00 @3.50 per barrel. Lemons, California, .00@6.00 per box. Oranges, 2.00@3.00. Pineapples, per crate, 1.50@3.50. Caliornia apricots, per box, 75@1.25. Peaches, 90@1.25. Plums, 85@1.50 per rate. Pears, 2.25@2.50 per box. Grapes, .00@3.25 per case. Cantaloupes, 1.25 @2.75 per standard crate. Watermelons, 140.00@225.00 per car. Blackberies, 1.25@1.35 per 16-quart case. Red aspberries, 1.50@2.00 per 24 pints. Black caps, 90@1.25 per 24 pints. Gooseberries, 90@1.10 per 16-quart ase. Currants, 1.25@1.50 per 16 uarts.

CINCINNATI, July 27.—Hot. Sold ve cars oranges. Market is declinng.

ANOTHER CITRUS PEST

(Continued from Page 99.)

chedule A, and we may say that chedule A is three-fourths of the riginal Woglum schedule. Mr. Cuniff believes fully that with this chedule he will get good killing as ate as November or possibly December. The tents, being new, will be ept in good condition, fumigation oprations being directly under the suervision of Mr. Cundiff.

In addition to the five gangs, with ve men in each gang, which will do ork for orchardists, contractors will nter the field with their outfits and rosecute the work as rapidly as posible. Even under these circumtances it will be impossible to cover ll the orchards of Tulare County in he one season. However, there are any orchardists who will use the ld-time spray pump, thinking to get easonably good results by this methd. On this point we quote as follows om The Horticulturists Hand Book, ssued by Horticultural Commissioner William Wood of Los Angeles County:

"They seem to require fumigation somewhat earlier than the Black scale, say from July 15th to September 1st for the best results, and sprays have proved useless. There seems to be very little work of parasites on this scale."

But let me urge the growers to insist on strong dosage. In some southern orchards most unsatisfactory work was done last year. Some claim it was due to climatic conditions. But we note that practically all the fumigating done under the direction of the Los Angeles County Commission, as well as many other sections, was successful. Some independent contractors in the county, however, were warned by growers that any "burned' trees might result in suits for damages, and this naturally impelled the contractors to reduce the dosage to the minimum.

The Tulare County work will all be done with the tents, marked under the Morrill system, and by the use of the Woglum schedule or a modified form of it as stated above.

It will be impossible for all the trees to be fumigated and sprayed this year. The tents ordered by the county will cover only about one-tenth of the 15,000 acres. If contracting and cooperative fumigators should do an equal amount and sprayers much more, there would be still more than half of the infested orchards untreated. The worst infested will doubtless be done first, though so far as possible the "block system" will be followed.

The worst infestation is in one of the oldest orchards. The trees are almost touching each other and some are so badly infested that fruiting is stopped and the trees are a sticky mass of honeydew and smut. Dieback or many dead twigs are to be found in this orchard. As noted by Mr. Weldon the infestation is not in Tulare County alone, but in other northern sections, also in Southern California where it has been successfully fought for years.

Legal

Edw. L. Payne, attorney, 301-304 Douglas Building, Los Angeles, will answer legal queries in this department.

Immediate mail replies cannot be given except where fee to Mr. Payne is paid. When replies are wished in Cultivator address query to 115½ N. Broadway, Los Angeles.

Deed of Gift

Will you please tell me whether a a deed of gift is legal? I have been told that it casts a shade on the title and might make the property difficult to sell. Is that true?—Subscriber.

A deed of gift is legal and should cast no cloud on the title. It might, however, make the property difficult to sell under certain circumstances; for instance, a deed of gift made at a time when the grantor is insolvent and with intent to hinder, delay or defraud his creditors is void. A deed of gift might cause some to wonder if such circumstances did not exist and to hesitate on that account to purchase the property from the grantee in the deed of gift. If a title company will certify to the title in such a grantee, that ought to be sufficient to clear away any cloud. Again a deed of gift made by a married man of community property, if made to some one other than his wife, is void or voidable. Of course, if the wife joins in such a deed that cures any doubt upon that score.

Ownership of Water

A and B own a stream of water flowing through A's land. On A's land water rises ranging from 110 to 130 degrees F. By a decree of the court A owns without restriction all hot water, but the court does not define at what temperature it becomes hot water. Can A hold said water as hot water? Has A any legal right to change the natural course (on his own land) to separate the creek water from the spring water? Has he any right to pollute said water and allow it to flow into said stream when said stream is the only source for domestic water for several persons?—Subscriber, San Bernardino.

I would have to have the decree of court you mention to guide me before I could answer the first part of your question, and perhaps I could not answer it then without knowing all of the details of the case. As to the second part of your question, A has no right to change the natural course of the waters on his land, if, by so doing he causes them to flow on to his neighbor's land at a place different from that to which they would naturally flow, and if the change causes damage to the neighbor. A has no right to pollute the waters of the stream so that the pollution will damage the lower owners.

Marketing!!

That's the Problem

It matters little whether you have to sell a carload of corn-fed steers, or a bushel of onions, the problem is before you. And you must meet it. Here's a concrete illustration:

Why Is It So?

"When the farmers of Kansas are feeding Elberta peaches to their swine, rather than to haul them to a 15-cent market, the housewives of Chicago and the great Northwest are paying one dollar a peck, $3.50 a bushel, for the fruit."—A news item.

This absorbing problem was threshed out to exhaustion in the Great National Conference on "MARKETING and FARM CREDITS," held in Chicago in 1913. The ablest men in the World participated in the deliberations and discussions.

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left, while there are 1,000,000 farmers and economists in this country who need and really want them. Price is just $1.00, postage included. During the month of July, 1914, these desirable books go onto the Bargain Counter to our subscribers. New subscribers or renewals are treated alike.

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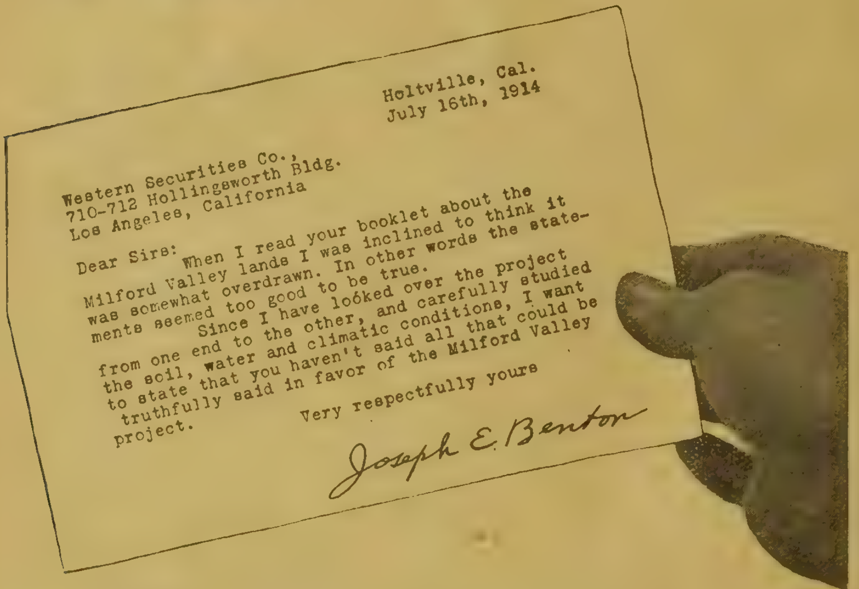
—he bought in Milford Valley and this is what he said!



Holtville, Cal.
July 16th, 1914

Western Securities Co.,
710-712 Hollingsworth Bldg.
Los Angeles, California

Dear Sirs:

When I read your booklet about the Milford Valley lands I was inclined to think it was somewhat overdrawn. In other words the statements seemed too good to be true.

Since I have looked over the project from one end to the other, and carefully studied the soil, water and climatic conditions, I want to state that you haven't said all that could be truthfully said in favor of the Milford Valley project.

Very respectfully yours

Joseph E. Benton

Mr. Benton's comments are almost identical with those of practically every man who has visited the Milford Valley irrigation project in the last eight weeks. No western farm land offering of the last ten years has met with greater approval and success than Milford. And no wonder! This land is being sold at $30 per acre, with a perpetual water right at $70 per share—the latter on twelve years' time, if desired.

When under cultivation and in alfalfa this land should sell within five years for more than $200 per acre—AND SHOULD ACTUALLY PAY FOR ITSELF TWICE OVER WITHIN THAT TIME. You can figure it out for yourself that this means not only more than 20 per cent annually on your investment, but the return of your original capital besides.

$30 An Acre

On Main Line of Salt Lake Railroad Adjoining Milford, Utah,

The older CULTIVATED LANDS in this district, EVEN 15 TO 30 MILES FROM THE RAILROAD, are held as high as $250 per acre and more. And the owners of these lands admit that the soil of the Milford project is as good or better. And our land IS RIGHT ON THE MAIN LINE OF THE SALT LAKE R. R. Practical, successful, keen-minded Southern California ranchers have purchased Milford Valley lands during the last eight weeks to the tune of over $250,000.00. There MUST be substantial reasons for this heavy sale. If you are in the market for something extraordinary priced away below actual value—make arrangements now to join our next excursion party at low homeseekers' rates. Go up and see why nine out of every ten buy this land at sight. Go and see the bumper crops of grain, alfalfa and fruit on lands adjoining the new project. Talk direct to the ranchers. Write for new illustrated booklet—also special article on Milford Valley in last issue of Western Empire magazine.

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did not settle the war in Mexico and it will never settle the successful war being waged by

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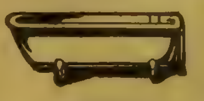

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Finest Grade Porcelain Lavatories. Every conceivable design and pattern. Write our Service Department if you are undecided as to what you want in Lavatories. Our department will advise you; other grades from —$4.25 up.

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Our Standard Brand of Paints is manufactured especially for us by one of the largest and best known manufacturers in the world. We absolutely guarantee it, both for durability and quality. It is strictly up to standard, and we also guarantee it to run true to color card and to be of uniform shade. We refund your money in full if you are dissatisfied. Color card sent free upon application.

"Standard" House and Floor Paints, per gal.	$1.50
"Standard" Porch Paint, per gal.	1.75
"Standard" Interior Oil Wood Stains, per gal.	1.50
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Send for price list on Varnish. 15 per cent off for a short period only.

Corrugated Iron, per hundred square feet	$3.75
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Galvanized Poultry Wire, 2-inch mesh, in rolls, per square foot	½c
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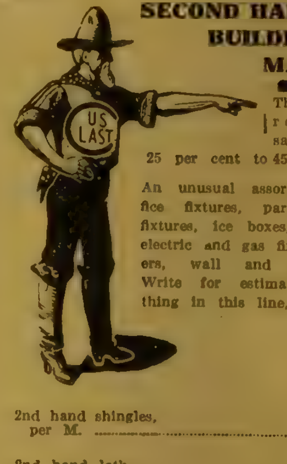

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New No. 2 Redwood boards to 12" wide, per M.	$12.00
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LOS ANGELES August 6, 1914 SAN FRANCISCO

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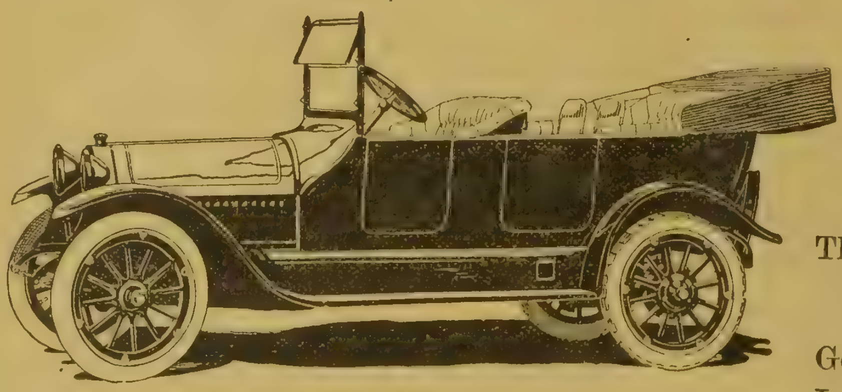
The Porterville Ranch Company Marketing its Alfalfa at Unsatisfactory Prices has Decided to Feed and Drive it to Market on the Hoof. The Manger in the Foreground Continues in the Far Distance Where the Faint Line of it May Be Seen Over the Load of Hay. It is Over Four Thousand Feet Long, Which Means Practically Four-fifths of a Mile.

The New Studebaker Automobiles



The New SIX—5-Passenger (7-Passenger $1450) $1385

Two body styles: Five-Passenger and Seven-Passenger Touring.
Wheelbase—121 inches.
Long-Stroke (5-inch), Small-Bore (3½ inch) Motor; Six Cylinders, en Bloc.
Smokeless, Non-Leaking Lubrication System.
Larger Valve Openings.
New, Exhaust-Silencing Muffler.
Annular Piston Rings.
Cellular Radiator.
Lighter Reciprocating Parts.
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150 Pounds Lighter.
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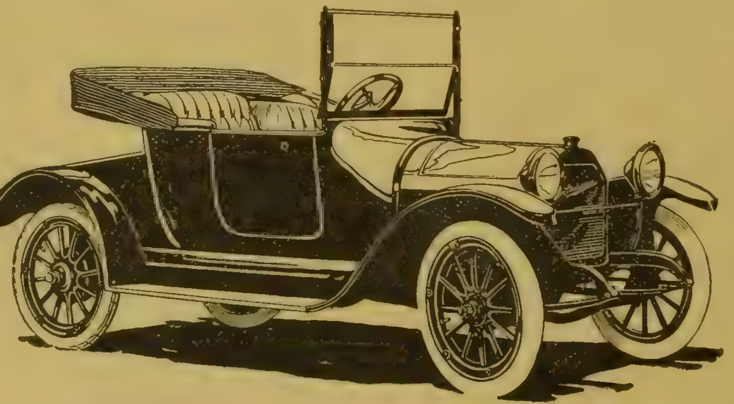
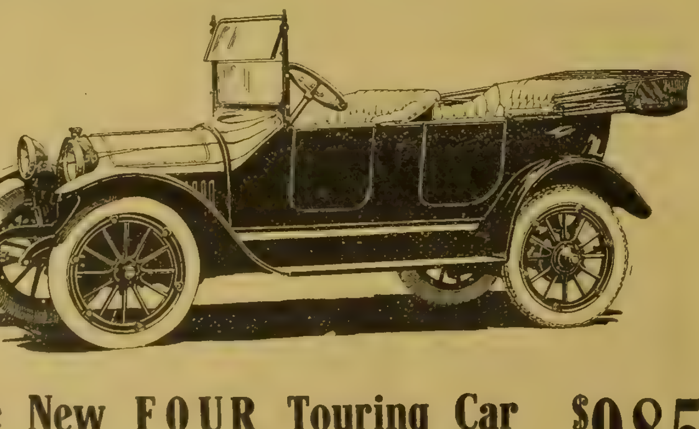


The New FOUR Roadster $985

A three-seated roadster that actually seats three grown persons in perfect comfort. Driver's seat set slightly forward. A special top, baggage compartment at rear, etc. Same general specifications as FOUR Touring Car.



The New FOUR Touring Car $985

Two Body Styles: Five-Passenger Touring; Three-Passenger Roadster.
Wheelbase—108 inches.
Long-Stroke (5-inch), Small-Bore (3½-inch) Motor; Four-Cylinders, en Bloc, Exhaust, Manifold - Cast Separate.
Smokeless, Non-Leaking Lubrication System.
Larger Valve Openings.
Pressed Steel Push-Rods.
Annular Piston Rings.
Tubular Radiator with Auxiliary Water Tank.
Crowned Fenders.
Special, Dimming Headlights.
100 Pounds Lighter.
12 x 2½-in. Brakes.
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Magnetic, Non-Leaking Gasoline Gauge, the Only One Approved by Insurance Underwriters.
Generous Footroom in Both Compartments.
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Vol. XLIII No. 6 LOS ANGELES: THURSDAY, AUGUST 6, 1914 One Dollar Yearly

Marketing Alfalfa on the Hoof

An Alfalfa Ranch in Tulare County Which is Solving the Cheap Hay Situation in a Most Sensible Way. Feeding the Beef in Corrals Almost a Mile Long.

The present season's oversupply of hay is putting hay producers to the test. Many will store and hold for more satisfactory prices, others will sell at present prices, and a few will secure good prices by feeding and marketing live stock. At least we think they will for we recently saw an experiment being carried on in Tulare County which looks good from the alfalfa producer's standpoint.

A few years ago the business men of Porterville, knowing of the exceptionally rich lands underlaid with water lying to the west of Porterville, and still within Tulare County, purchased a great body of it, sunk wells and proceeded to plant alfalfa. Water, soil and climatic conditions were almost perfectly adapted to the growth of alfalfa and good crops were the result. Ten tons was the return in the case of a few of the rich acres, others not so perfectly adapted ran five, six and seven tons per acre per year, the average amounting to considerably above seven tons. Up to the present year the handling of this rich property proved exceptionally profitable simply as a hay ranch. This year it is different, for while with the exceptionally cheap production it is possible to raise and dispose of the hay at this year's prices it is not profitable in comparison with former returns, so with the business foresight of the modern American farmer the company got busy. A string of corrals was built. These corrals, which are 100 by 208 feet in size, or approximately one-half acre each, make a string approximately 4000 feet long, or nearly four-fifths of a mile, and in them may be fed something over 1200 head of stock. The idea is to make each corral hold about 60 feeders secured from the ranges of New Mexico, Arizona or Mexico. At the time of the visit of the writer there were 641 head which had been in the corrals only a few days and they still were not over their surprise at the wonderfully rich feed they were receiving. So far only alfalfa is being fed. Some of this is from the stacks of cured hay, some is fresh cut green alfalfa direct from the fields. In addition, the finishing off will begin in a short time with a ration of rolled barley, seven to eight pounds to each animal daily, and, of course, alfalfa all the stock can eat, or at least 25 pounds per day per head. This is a year in which rolled barley may be had at a very reasonable price, and instead of storing and hauling to market it will be much cheaper to drive it to market in the form of high priced beef. It is assumed that from 60 to 90 days will be required to finish off the stock ready for the block.

As noted, the corrals are in one long string with a capacious manger running the entire length of one side and a lane along the other. The illustrations on cover page give an excellent idea of the arrangement. A roadway is being constructed along side the manger, and wagons directly from the stack or fields make the distance, filling with hay or grain. The arrangement of the lane on the other side of the corral is shown in one of the lower engravings also on cover page. As the gate swings open from the corral it closes the lane so that the stock are forced to go toward the exit. The method of gate construction is admirably shown, the "hinge" being the old time steel band around the upper part of the gate

(Continued on Page 135.)

Stocks for Fruit Trees

Address by U. P. Hedrick of New York Experiment Station, Before State Fruit Growers' Convention at Davis.

Nearly all fruit trees are consorts of two individuals. We distinguish the parts of the consorting tree as stock and scion—terms which need no definition. Fruit growers refuse to believe that the stock has any influence on the scion, at least the industry of growing fruit is carried on with little or no regard to the interactions of stock and scion. Yet there is no doubt but that stock and scion do react the one upon the other and that all fruits propagated by budding and grafting are influenced for better or worse by the stocks upon which they are worked. Experiments, experience and observation show that the physiological functions at least of both root and top are modified the one by the other. To this fact most of those who have given study to the question now agree, though they are not in accord as to the degree of the influence and the explanations offered by all are more or less hypothetical.

It is not a matter of wonder that fruit growers do not believe that the stock affects the scion, for we know little about it, and "nothing is so firmly believed as that which a man knoweth leath." Nowhere can one find clear cut definitions and careful analyses of the effects of the stock upon the scion. Everywhere there is much misconception and not a little deception in the use of stocks in the propagation of fruit trees so that fruit growers neither know what the best stock for a particular fruit is; or, if they do know, they cannot be sure that their trees are on the stocks of their choice. To complicate the situation further, results in the use of all stocks are profoundly modified by soil and climatic conditions, causing man to draw widely varying conclusions and more than all else bringing about the state of "confusion worse confounded" that we now have in the whole matter of stocks for fruits.

Were one to discuss the mutual influence of stock and scion in detail, citing examples of the manifold phases the subject assumes, he could easily fill a volume, a large one, and as interesting as large. In the time at my disposal, however, and for the topic under consideration, Stocks for Fruits, I can but briefly touch upon such parts of the subject as show the influence of the stock on the scion. Avoiding details and all taint of theory, let us consider the ways in which the stock influences the scion.

First, the stock modifies the form and stature of a plant. Pears on quince, apples on Doucin or Paradise roots, and cherries on the Mahaleb, are familiar examples of the dwarfing effects of stocks. Increased size less often, if ever, occurs. The altered size and forms of trees resulting from grafting cannot be said to be due wholly to diminished vigor and not at all to debility. Rather, the scion takes on the size, form and somewhat the peculiarities in habit of growth of the stock. Thus the scraggly Red Canada and Winter Nelis worked on Northern Spy, assume, somewhat, not wholly, Spy characteristics of growth; the pear on quince takes the size of the quince; the apple on Paradise or Doucin, the size and form of these stocks; a Montmorency cherry worked on a Mahaleb simulates the form of the Mahaleb; on a Mazzard, the form of the Mazzard.

Second—The adaptability of a species or a variety to a soil may be changed by the stock. Thus peaches when worked on plums may do well on heavy soils, where on their own roots they would be worthless. Conversely, the plum can be adapted to light soils by working on the peach, thriving still better on the Myrobalan in most soils. The almond is often preferable to the peach as a stock for peaches in irrigated lands. The Mahaleb is sometimes better than the Mazzard for cherries in shallow or in wet soils. These are but a few illustrations; many more might be cited if multiplication served a purpose. Possibly this is the most important of the favorable influences of the stock on the scion, for through it many fruits can be grown in unfavorable soils which would not thrive, in some cases would not live, on their own roots. The use of stocks to overcome adversities of soils, in my opinion, demands much more attention from fruit growers than it has had.

Third, through the stock a plant may be made to endure an incompatible climate. It would be quite too much to say that hardiness as an inherent quality is transmitted from the stock to the scion, but it is very certain that the increase in vigor imparted by some stocks to the scion gives greater hardiness to the grafted plant. In the case of late growing apples worked on Hibernal or Oldenburg stocks, greater hardiness results from the fact that the scion matures earlier than it would upon its own roots, and is thereby better able to withstand the winter. So too there is earlier ripening of wood and greater hardiness when the sweet orange is worked on the sour orange. Again, the slight obstructions to the flow of sap imposed more or less by the union of the different tissues of stock and scion may cause the scion to ripen earlier and thus bring about greater hardiness. Some plants, as the peach, must have a warm soil bottom heat, and therefore in cold climates the peach does better on the plum, which thrives in cold soils, than on its own roots. There are still other adaptations to climate for which we can offer no explanation.

Fourth, the stock, if diseased, may impart the disease to the scion. Such is the case when peach stocks infested with peach yellows or little peach are budded with healthy buds. The classical illustration of the conveyance of disease by grafting is that of variegation in foliage which usually passes from the scion to the stock. Variegation is a phenomenon possibly brought about by malnutrition, or, according to some, by the formation of some chemical substance which passes from scion to stock.

Fifth, the productiveness of the tree is often increased by the stock, paradoxically enough, either by increasing the vigor of the plant or by decreasing it. Trees sometimes fail to fruit well because of too much wood growth, in which case grafting on a less vigorous stock checks growth and makes the plant more productive; thus we may explain the greater fruitfulness of some dwarf apples and pears. On the other hand, a species or a variety may be too weak in growth to be fruitful, in which case grafting on a stock which imparts vigor may make them more productive.

Sixth, the time of maturity of both wood and crop may be changed somewhat by the stock, hastened on the one hand or retarded on the other, according as to whether the stock ripens earlier or later than the scion. It follows, of course, that the keeping quality is affected in the same degree as maturity. Thus, it is found that oranges on Trifoliata ripen earlier than on other stocks. The statement is common in literature that many late fruits budded on early ones ripen earlier and that some early fruits on late varieties, ripen later. It seems from what is known on this subject that we are warranted in saying that earliness is promoted in the scion, only however, when the stock ripens its wood earlier than the scion; lateness, when the wood ripens its wood later.

Seventh, the color of a fruit may be changed by the stock. There is little evidence to substantiate the claim often made that the characteristic color of a fruit is changed by the stock, but, as all know, color is heightened by earliness and lessened by lateness in the maturity of a vari-

(Continued on Page 125.)

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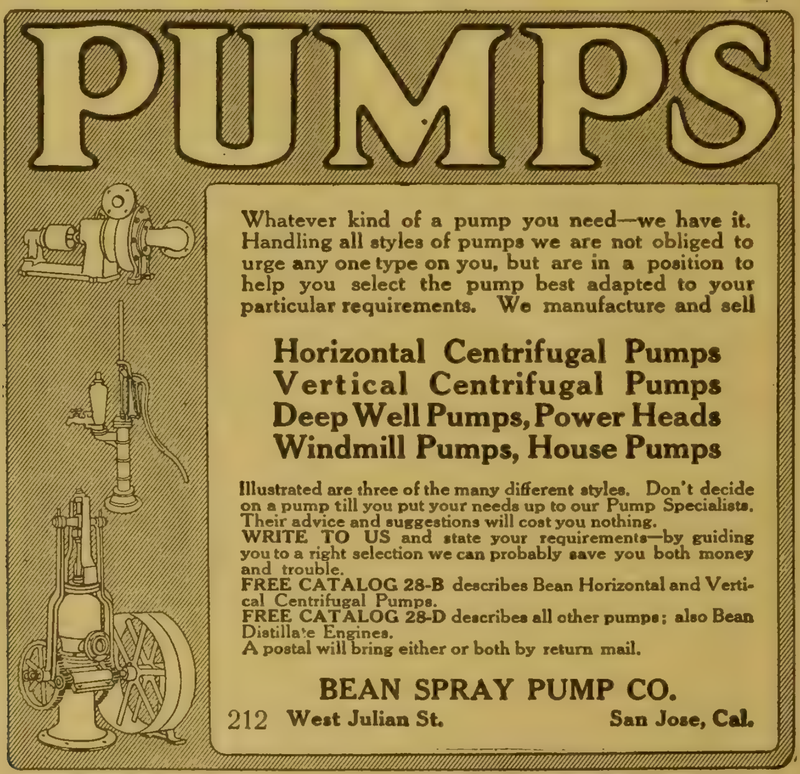
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Citrus and Tropical Fruits

BROWN ROT GUMMOSIS OF CITRUS

Written for the California Cultivator

By H. S. Fawcett

Many questions are being asked by growers in regard to the nature of gum diseases and their treatment. Of the several different kinds of so-called gum diseases, the brown rot gummosis is perhaps the most common and most serious when all citrus regions of the state are considered.

These questions will be confined in this article principally to this form. Other forms, as scaly bark, etc., will be considered in later issues of this paper.

Question 1. Is the exuding of gum from a citrus tree always a sign of serious trouble?

No. Some forms of gumming are only, temporary and the tree soon overcomes them of itself. This is not true, however, of the brown rot gummosis, which is characterized by killing of areas of bark on the trunk clear through to the wood and the exudation of large quantities of gum. This form, if not checked, may in time kill all the bark at the base of the tree and cause its death.

Question 2. Is the gum the result or the cause of the diseease?

Merely the result. Many experiments have shown that in the brown rot gummosis the gum is merely the result not the cause of the dying of the bark. The bark first begins to be killed by the fungus, which is misroscopic, and the gum is only a product which the tree forms as a result. Attention therefore should be directed not so much to the gum as to the areas of killed bark where the fungus resides.

Question 3. What then is the cause?

Speaking only of brown rot gummosis, the causal agent is the invisible brown rot fungus (Pithiacystis citrophthora) which resides in the soil, (especially in heavy soils); the causal conditions are: excessively wet soil too high against the trunk, poor drainage, injuries to the base of the tree in digging around it in wet weather, etc.

Question 4. How should trees which begin to show brown rot gummosis be treated?

Use a sharp knife with a heavy blade. First determine to what extent the bark is killed to the wood in the vicinity of the exuding gum. Then cut all around the area about one-half to one inch into the live, unstained bark and a little farther at the top than at the sides, as the fungus usually extends faster upwards than in other directions. Then dissect out this entire area of bark that is killed to the wood and treat the wound and the entire trunk as well with Bordeaux paste. Experience seems to indicate that it is unnecessary to scrape the discolored wood.

Question 5. Is the further exuding of gum from the wound after cutting out the diseased bark and after the application of Bordeaux paste to be expected?

Yes, it is to be expected and need not cause any alarm unless more bark dies back on the edges. Considerable clear gum, especially from the upper edge, will form and run down over the edges of the wound. No attention need be paid to this gum except to examine the places at intervals of two or three weeks to see if any more bark is being killed. If the cutting was properly done at first, healing will begin to take place in a few weeks in spite of the gum all about the edges. The gum that runs down over the Bordeaux is free from infectious material. It will in time stop forming and fall away or be dissolved by the first rains. If any part of the margin of the wound dies further after treatment, that part only should be cut out further. No more bark should be cut off than is absolutely necessary to stop the progress of the fungus. Some trees have resistance enough when weather is dry to temporarily stop the progress of the fungus without aid, but it is usually unsafe to trust this natural resistance, if one wishes to avoid another outbreak the following spring.

Question 6. How would you prevent gummosis in planting a new lemon orchard?

On heavy soils I would plant only trees budded high (the higher the better, up to two feet or more) on sour orange stocks and avoid planting them too deep. Inoculation experiments have shown that to the brown rot fungus sour orange bark is most resistant, sweet orange somewhat less resistant and lemon bark very susceptible. Then after the trees had been set out for a year or two, I would protect the trunks with an application of Bordeaux paste in the fall before the rains begin.

Question 7. What is the formula and the instructions for making good Bordeaux paste?

A good formula for a small quantity is: One pound of blue stone (copper sulphate) dissolved in three quarts of water in a wooden, earthen or glass vessel; and two pounds unslaked lime slaked in three quarts of water in a separate vessel of any kind. When the lime is cool, stir the two together, making a slightly pasty light blue mixture. On a larger scale the formula would be 12 pounds of blue stone to eight gallons of water; and 24 pounds of lime to eight gallons of water. The blue stone is easiest dissolved by suspending it in a sack at the top of the water over night. If the blue stone is pulverized and suspended in warm water it dissolves rapidly. Good lime that is not air slaked should be used, and after slaking it with the water it should be allowed to cool before being used in making paste. If covered to avoid evaporation each ingredient will keep indefinitely, but after mixing the paste slowly deteriorates. Where it is being used over a number of days or weeks, just enough of the wet slaked lime and the blue stone solution should be mixed to make paste enough to last for one or two days, leaving the remainder unmixed in separate vessels. It may be applied with large brushes as is whitewash.

A number of lemon growers are using this mixture on the trunks of all the trees to prevent further infection. In situations where the soil is heavy and trees planted too deep or the bud unions on the lemon trees are too low and there is difficulty of controlling the moisture conditions about the trunk during the rainy season, the writer would suggest digging away the earth from about the base and painting the entire trunks from the first branches down over the bud union. If this is done in the fall before the rains begin it will tend to prevent any new cases the next spring and summer. Keep the earth from getting too high about the base of the tree, even though a small basin has to be left. Water standing temporarily in this basin after each rain will do less harm than the wet soil standing constantly against the trunk during periods of frequent rains. Where trees are mulched heavily this mixture would tend to prevent the damp mulch from encouraging brown rot gummois.

STOCKS FOR FRUIT TREES

(Continued from Page 123.)

ety. In the cases, then, in which the stock influences the time of maturity the color may be more or less changed. The speaker knows of an orchard of McIntosh apples which are grafted on Oldenburg, the fruits of which mature nearly two weeks earlier than McIntosh on standard stocks and are much higher in color.

Eighth, the size of a fruit is often increased by the stock. I need only cite the pear on the quince as an example though many other illustrations might be adduced.

Ninth, rather reluctantly, from my point of view, we must accept the testimony that the stock affects the flavor of the fruit borne on the scion. It is not hard to believe that larger, crisper, juicier fruits of a variety can be grown on some stocks than on others and that, therefore, the flavor is improved. But how a sour variety grafted on the stock of a sweet one, or the reverse, can change the degree of sweetness or sourness is past understanding, yet an abundance of evidence seems to prove such changes sometimes to be the case.

Tenth, some stocks shorten the life of the trees of which they are a part. Apples on pears and pears on apples are short-lived trees. Common pears, Pyrus communis, are short-lived on the Chinese pear, Pyrus sinensis. It may be laid down as a rule to which there are but few exceptions, that grafting a weak-growing species on a vigorous stock will result in a short-lived tree.

So far we have been discussing tree fruits. Much more is known about the influence of the stock on the scion in grape-growing, as you in Califorina with your reconstructed vineyards should know. To briefly epitomize: Experimenters hold, and I quote only from those of established reputation, that there are very appreciable differences to be noted between the chemical and physical composition of grapes grafted on various stocks and the fruit of vines on their own roots. Among the effects claimed for grafting, I note but do not vouch for the following: The fruit of the grafted vines is larger, has bigger seeds, thinner skin, the berries are less numerous, the juice is more copious, is usually both more acid and sugary, is less rich in phosphate, more highly charged with nitrogenous matters, has little tannin, less color, and the color is less stable; the vines are more fruitful; the fruit matures earlier. These differences vary in different cases. From the fact that the color is less stable and the proportion of the nitrogenous matters in the must is greater, the wines from grafted vines are said to mature more rapidly and are more sensible to injurious fermentations.

In an experiment with grape stock for American grapes, carried on for 11 years at the New York station, we found material differences between grafted and ungrafted vines, all included in the above summary.

There is no doubt, I must say in passing, that there is a reciprocal influence of the scion on the stock. We know certainly, for example, that the form of the roots is much changed by the scion. Thus, in starting apples in a nursery we graft or bud on seedlings which, ungrafted, would have root systems much the same, but at digging time the roots are as diverse as the varieties. Red Astrachan, for instance, has an exceedingly fibrous root system with few tap roots, while on either side of the Red Astrachan row Oldenburg and Fameuse are almost destitute of root fibers, having instead a deep tap-root and two or three prongs. So, with practically all fruits, though not as noticeable with any as in apples and pears. Nurserymen tell me the weaker the top-growth and the sparser the foliage of a variety, the more deficient is the root growth.

To the general rule that allied species grafted together retain their identity there are a few exceptions in which the scion acquires characters from the stock or the stock from the scion — the graft-hybrids of experimenters. There are on record a sufficient number of such hybrids, or pseudo-hybrids, to make out a case for hybridism through grafting. It would be interesting and profitable to consider in detail the several supposed graft-hybrids, but as none have practical value they are more suited to controversy than to real life—mentioned here simply to show the possible extremity of the mutual influence of the stock and graft.

What are the explanations for these various reciprocal effects of stock and scion? Plant physiology does not help us much in the elucidation of the influences of grafting. Theoretically, from the anatomy of plants, we can expect nothing more in grafting than the adhesion of the graft to the stock. The tissues below the union are those of the stock; above it, those of the scion. Yet there is some reason to suspect that definite substances pass from one to the other in the consorting parts of a grafted plant and produce specific results. Thus, as we have seen, when a scion with variegated foliage is grafted on a normal stock, shoots which spring from the stock below the graft are variegated. Or, if the deadly nightshade be grafted on a tomato, the poison, an alkaloid, atropine, passes down into the stem and root of the tomato. But, curiously enough, if the variegated plant or the nightshade be used as a stock, the variegation in the one case and the atropine in the other do not pass upward into the scion.

An ingenious and not at all improbable reason for some of the influence of the stock upon the scion was offered by a speaker in the French Academy of Science. He had made analyses of pear tree two years old from the graft on quince and pear stocks to determine the relative quantities of hydrocarbons stored in the stems of the two sets of plants. It was found that during the autumn and winter the reserve matter was markedly more abundant in the stem on quince stock. In the spring, therefore, the pear plant on quince is enabled to furnish a greater quantity of food matter, for the formation of fruit and crop production is greatly increased. Then again, the reserve food in the stem is nearer the fruit than in the root and is thus possibly more readily utilized. If these experiments are accurate we may find that the best stocks are those whose roots store the least quantity of reserve foods and so force the accumulation of reserve matter in stems.

Unquestionably some of the effects of stocks are due to altered nutrition, possibly to insufficient nutrition of stock or scion. All evidence points to the disturbance of nutrition as the chief cause of the effects of grafting. It may be that the food elaborated by the foilage of the scion is different from that which the stock would have had with its own foliage. It has been suggested that the differences in the specific quantity of the sap in stock and scion may be the disturbing factor.

But these explanations are not sufficient to cover all the phenomena arising from grafting. Truth is we have in the matter of grafting for most part only certain isolated facts to explain which we must rely, for the present, upon inferences which have the greatest amount of probability in their favor from the knowledge in hand. The poet says: "And still upon the thorniest stock, the sweetest roses love to blow." It remains for some one to tell us why.

Important though the effects of stocks as we have just discussed them are on the scion, any and all are but incidental to the true explanation for a two-part tree for practically all orchard plants. At the proper seasons in every nursery an army of expert workmen are found grafting or budding so dexterously, precisely and rapidly that their work is little short of marvelous. What are the reasons for all of this seemingly extra work of grafting? Why do not nurserymen sell us plants on their own roots? An intelligent body of fruit growers scarcely needs an answer to this question. You all know that in no other way can fruit trees true to name be propagated so rapidly. In some cases there is no other possible method of multiplying a variety. But unfortunately, the stocks chiefly chosen by nurserymen are those which can be worked most easily and soonest give a presentable nursery tree. The fruit grower in buying chooses a stock, if he gives the matter sufficient thought to make a choice, one that does not sucker, or one that best suits his soil, and in a few cases a stock that will give a dwarf tree. All other of the effects of the stock on the resulting tree are wholly ignored alike by nurseryman and fruit grower.

It does not follow, however, that whatsoever stock one wants can be used. Even when the botanical kinship is close some plants resist all of the appliances of art to make a successful union, while on the other hand there are quite distinct species of fruits that seem foreordained by heaven to be joined. Thus a pear will not grow well on an apple nor an apple on a pear, closely related though they are; but the pear readily unites with the quince or the hawthorn. So, too, the peach and the apricot are grafted on each other only with difficulty, but both readily unite with the almond and the plum. Sweet and sour cherries grow well on the Mahaleb cherry, but the Mahaleb will not grow on any of the cultivated cherries. Sour cherries upon sweet ones succeed less well than the latter on the former. The gooseberry will not grow on any of the edible currants, but thrives on the golden currant, Ribes auream. Something more is necessary, then, than botanical kinship, but just what no one knows, beyond, of course, the knowledge that there must be some conformity in habit between stock and scion; that the two must start in growth at approximately the same time, and that the tissues must be sufficiently alike that there be proper contact in the union. Yet these facts do not sufficiently explain the affinities and antipathies which plants show. Thus the propagator has little to guide him in selecting stocks and can choose only after making repeated trials, near relationship being the only guide, even though often an untrustworthy one.

Nor is the tale of tribulation yet told, for we shall find that not only are all grafted plants affected by the kind of stock used, but also by the manner of propagation, whether from seed or from cuttings. There is no question, for example, that stocks propagated by cuttings do not produce the deep tap and prong roots that seedlings do, and seedlings lifted and root-pruned the season before they are budded or grafted have a thicker and bushier root-system than if they be not so transplanted. And so, at the risk of stirring up more hares than we can possibly run down in this matter of stocks, it seems necessary to say that we cannot neglect for the best interests of fruit-growing the way in which stocks are grown. Undoubtedly for some conditions we shall find stocks from cuttings preferable; under others, and, generally, however, we shall find seedlings the better when, of course, we have a choice. So, too, usually, when nursery practice permits, a stock is better for having been transplanted before budding or grafting.

In passing it may be said that a retrospective glance in horticulture shows that the use of stocks for fruits and ornamentals is no new thing. The Latin poets, Cato, Columella, Virgil and Pliny could wield the grafting knife as well as the pen. It could be wished, however, that the statements of these old Romans were as accurate as the meter in their verse, for their inaccuracies prepared the ground for a crop of misunderstandings which even yet we are not rid of. It is probable that the Romans, and possibly the Greeks, propagated some fruits. The Romans certainly did roses, by grafting on stocks much as do our nurserymen today. The Paradise and Doucin stocks for dwarfing apples, dwarf pears on quince, the Mahaleb to dwarf cherries, all have been in common use in the Old World for several centuries as we learn from the old herbals. Shakespeare's familiar quotation:

"You see, sweet maid, we marry
A gentle scion to the wildest stock;
And make conceive a bark of baser
    kind,
By bud of nobler race; this is an
    art,
Which does mend nature; change it
    rather, but
The art itself is nature."

So much to show that we have the practice and experience of centuries to guide us in the matter of stocks,

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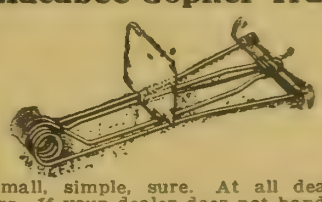

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THEODORE PAYNE
345 So. Main St. Los Angeles

though the accumulated wisdom seems to be of little present use.

The selection of stocks leads straight to the center of another problem. We are hearing much about the individuality of orchard trees and the necessity of propagating from individuals having the best characters. The speaker does not believe in the inheritance of acquired characters, finding but little in either theory or fact to substantiate it. Present knowledge makes more forceful every day the old aphorism, "Like begets like," "Race is everything," "A chip of the old block" and "Like father, like son." Heredity in the light of science is a tight compactment into which new characters seldom find a way. The multitude of trees in any variety, all from one seed, it seems paradoxical to say, are morphologically one individual. How, then, can the differences between individual plants in every orchard in the land be explained?

Ample explanation, it seems to me, is found in "nurture" without invoking a change in "nature" to account for the innumerable variations in orchards. Soil, sunlight, moisture, insects, disease and last but not least, the stock which supports the tree, these with many other factors, give every individual plant an environment of its own from which come characters which appear and disappear with the individual. Thus, I am sure, we can bend a variety by means of a stock, but I should be the last one in the world to hold that we could permanently mold it into any new form given it by a stock. Let go the force, whatever it may be, which temporarily bends a variety, and it snaps back into its same old self.

One more generalization and I am ready to conclude. In the refinement of fruit growing that is coming we must breed the stock as we now do the variety which it supports. The stocks of apples, pears, peaches, plums, cherries—all tree fruits—are supposed to be seedlings of wild species which we know vary much less than do seedlings of cultivated varieties. Yet it requires only a cursory investigation into the growing of nursery stock at home or abroad to find that apple and pear seed from the cider press and pits of stone fruits from canneries are commonly used in growing nursery stocks. Under present methods it is mere chance, a throw of the dice, as to whether one gets a tree on a good stock or a bad one. Would it not be a safe stroke of business for a nurseryman to select his stocks and through his catalog educate fruit growers as to the greater value of trees on selected stocks?

No one man's experience with stocks is sufficient to enable him to speak authoritatively on the subject, and in the present chaotic condition of our knowledge of stocks it would be a job for Job to start out and classify the contradictory opinions of the multitude who have expressed themselves on stocks in the horticultural literature of the past three or four centuries. The somewhat random and rather fragmentary thoughts which I have been able to give you may be summed up briefly for practical application as follows:

The future of fruit culture is bound up with the nature of the stock. The stock modifies the stature of plants; suits them to the soil and to the climate; influences fruitfulness; changes the time of maturity, size, color and flavor of the fruit; and affects the length of life of the trees. The stock, too, is influenced by the scion. The method of growing the stock, whether from cuttings or from seeds, is important. The effects of the stock on the scion, appreciable though they are, do not change the identity of a variety and are not heritable. If these arguments are well taken we can only conclude that fruit growers and nurserymen must give the question of stocks much more careful thought to the end, I am sure, that we shall thus secure more fruitful orchards.

FUMIGATION SUCCEEDING

Satisfactory reports come in from the Tulare and Fresno County citrus orchards as to the control of the Soft Gray Scale. The dosage schedule given in a recent Cultivator, however, is not the one in use, as by error it was handed to us instead of the correct one, which appears on another page of this issue. The error was caused by confusion regarding the sodium cyanide and potassium cyanide, which vary greatly in content of cyanogen. The corrected schedule may be counted upon to give a good kill and with careful handling do no injury to trees.

Allow us to repeat in order that we

(Continued on Page 143.)

Deciduous Fruit Culture

APRICOTS AND PEACHES

Written for the California Cultivator

By J. G. Berneike.

In order that I may not burden the columns of the Cultivator, allow me to state briefly just a few facts for the benefit of apricot and peach growers. Let them be wise.

The generally accepted estimate of the apricot crop for the state is 18,000 tons this year. The crop in 1912 was the largest with 20,000 tons. There was an idea current that the estimate for this year was too low, and eastern buyers were holding off partly because they thought prices might take a slump, since they had already eased off.

Much to the surprise of everyone here it turns out now that the crop in Orange County will fall considerably short of expectations, and this statement is based on deliveries made to the association packing house to date this year, compared with deliveries from the same orchards last year. The highest offer made here so far has been 9½ cents per pound for a fancy lot. The general offer now is 6½ to 8 cents. Some fruit has been sold at 8½ cents. There is but little buying and selling as yet.

The actual opening of the Panama canal will settle the question of freight rates. The realization of the fact that the crop is likely to be smaller than estimated will likewise settle an unfounded expectation of a slump in price. Association figures show an increase of only 12½ per cent over last year, instead of nearly 100 per cent as anticipated.

While apricot growers are holding firmly with the expectation of getting a living price, what about the peach growers?

Speculative buyers are selling the peach crop now at prices which will not pay expenses. They expect the growers to shoulder the loss. What will the growers do now? Pretty soon the speculator will knock at their doors to tell them what the market price is. What can the grower do? He can stand for a living price and turn the tables on the speculator, making him shoulder the loss. Will he be wise? Or will the peach grower be the only dull witted grower who cannot see through the wiles of the speculator, and unite with his neighbors to present a solid front? Since it costs the grower nearly five cents to produce a pound of dried peaches, less than five cents is not a living price.

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GOOD, CLEAN, SOUND FRUIT in much GREATER ABUNDANCE than do UNFUMIGATED TREES

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Because it generates evenly, little or no SULPHURIC ACID is carried out of the generator with the Hydrocyanic Acid Gas. Result—the practical elimination of burning and pitting of fruit.

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What a few prominently successful citrus fruit growers think of fumigation with hydrocyanic acid gas:

Mr. O. B. Griffin, assistant manager Leffingwell ranch, Whittier, Cal.:

"The fumigation of citrus trees is a profitable investment for the citrus fruit grower, and properly done will bring large returns."

Mr. McGill, manager McNally ranch, La Mirada:

"Correct and proper fumigation is the keystone in the structure of the citrus fruit industry. Without it there could be no profitable growing of citrus fruit."

Judge Erskine M. Ross, Los Angeles, Cal.:

"I have your letter of this date asking for a brief statement of my experience in respect to the advisability of fumigating citrus trees. As I have been a grower of such fruit for many years, I ought to know something not only of the advisability, but the absolute necessity of fumigation in localities where one's trees are subject to scale. I know from experience that a good crop of merchantable fruit cannot be produced on the same trees that produce a good crop of scale of any kind. I have, among other orchards, a good Valencia orchard of a fine quality of fruit. My failure to fumigate it three years ago caused me practically the loss of the crop of that orchard for two years; the income from which either year would have paid the cost of fumigation many times over. I did not fumigate it that year because those who examined it for the purpose, including myself, thought that it would go through that season without any substantial harm, without fumigation; but the scale multiplied so rapidly and so unexpectedly as to bring about the result above indicated."

Mr. Hemphill, manager for C. C. Chapman, Fullerton, Cal.:

"Correct fumigation spells clean trees, more and better fruit, highest prices in the market, and larger returns for the grower."

Mr. W. C. Hendricks, manager, Azusa Citrus Association, Azusa, Cal.:

"The cost of fumigating citrus trees should not be considered as a part of the expense account in the handling of a citrus grove, but rather as an investment that brings speedy and large returns on the money paid out."

Corona Lemon Co., Corona, Cal.:

"Replying to your inquiry, I did not suppose any California Citrus Grower in this day and age would doubt the absolute necessity of fumigation for scale. Any man who has scale and cannot fumigate should sell out as soon as possible, for there is no place for him in the business."

W. H. Jameson, Corona, Cal.:

"In reply to your favor of the 18th we have to say that we are strong believers in fumigation with Cyanide, as we consider it the most practical way to control the scale pest that has as yet been discovered.

"Whenever scale begins to make its appearance in orange or lemon trees here the grade of the fruit is lowered and if the scale is not cleaned up the trees begin to show the effects and the yield will surely be materially affected."

Mr. Pease, Horticultural Commissioner of San Bernardino, has knowledge of trees producing from four to six times more oranges and better fruit the first year following fumigation than they produced before fumigation.

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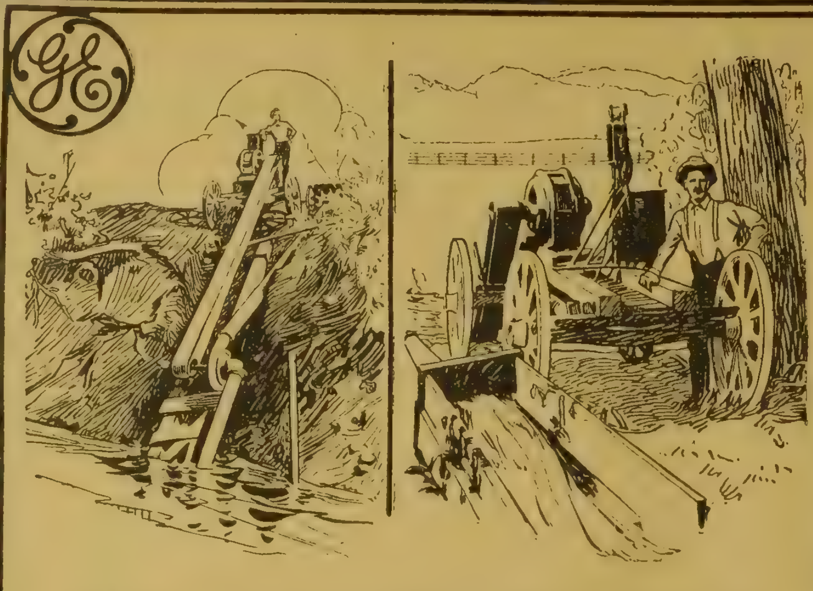

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This twenty-horse-power electric motor, photographed on the Melone Co.'s Ranch, Napa, California, not only pumps water to irrigate forty acres of alfalfa but, between times, runs an ensilage cutter, a rock crusher and a barley crusher. Being bolted to a wagon, it is easily moved from place to place.

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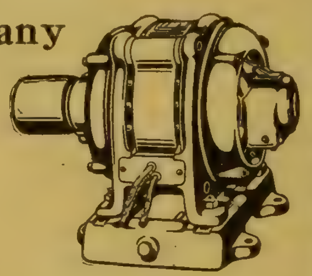

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Small Fruits and Vegetables

THIS MONTH IN THE SACRAMENTO VALLEY

Written for the California Cultivator

By S. S. Rogers.

Much of the land which was planted to early spring vegetables will during this month be ready for replanting to fall and winter crops. Where irrigation is practiced an application of well rotted manure should be put on at the rate of 15 or more tons per acre and spread evenly over the surface. This should be plowed under immediately to a depth of 10 or 12 inches, which should be sufficient to thoroughly cover it. The soil may be left in this rough condition or worked down and thoroughly irrigated as soon as possible in order to hasten the rotting of the manure. In a short time after the irrigation the field can be replowed and worked into condition for replanting. Where irrigation is not practiced it will be found more advantageous not to apply the manure until the winter rains have commenced. As soon as the field has been plowed after the irrigation it should be worked into a fine mulch as soon as possible and planted immediately, for it will lose moisture much more quickly during this month than at any other time of the year. The seed should be planted a little deeper than is desirable in the early spring.

In choosing the vegetables to be planted this month care should be used to select varieties which are fairly resistant to frost, for many will not mature until winter or early spring. The following list comprises some of the vegetables which can be safely planted in the Sacramento Valley during the month of August: Golden Wax and Canadian Wonder beans can be planted during the first week or 10 days of this month with a fair chance of securing a crop before the frosts come. The Golden Wax is a little more popular than the other variety. Cabbage seed can be planted this month or the plants set in the field. The Late Flat Dutch is the most popular variety, although the Sure Head and Winningstadt are used to some extent. Cauliflower plants can be set out this month or the seed planted. It is too late in the season to plant celery seed, but the plants may be set in the field. Many growers use the White Plume and Black varieties for the local trade and the Golden Self Blanching for shipping. If planted this month the first variety should be ready for the holiday trade, while the Black will not mature before spring. This latter variety will stand a low degree of temperature without serious injury, which makes it especially valuable for the spring market. Lettuce can be safely planted, and the Los Angeles variety will be found very satisfactory. Onion seed for the early spring crop should be planted in cold frames during this month. The plants will be ready to plant in the field during November and should mature a crop during May or June. The Italian Red is the most popular variety for this crop, although the Australian Brown is grown to some extent. Aside from the above mentioned vegetables the following can be planted during this month: Beets, carrots, parsnips, radishes and turnips.

THIS MONTH IN SOUTHERN CALIFORNIA

Written for the California Cultivator

By O. M. Morris.

The list of vegetables which may be planted is almost as complete as the flower list. In fact, we may safely include in the list everything but melons and squash.

Potatoes for late crop are now being planted. These will be ready to harvest in about four months. Early potatoes do not keep through the summer, and it is always necessary to raise what we term a late crop for winter supply.

Peas planted now will be ready for use during the holiday season. Beans are also seasonable, and the Kentucky Wonder variety may be planted for a succession of crop. With the beginning of next month it would be advisable to plant bush beans. Probably the best of these for late planting is the Canadian Wonder, as it is more hardy and will stand cold weather. The winter or shipping crop of cabbage and cauliflower should be planted. This will be ready to harvest following the holidays, or even before. Large quantities of cabbage and cauliflower are shipped east every year, and it has proved a very profitable industry. Turnips and all the root crops may be planted, as well as stock beets for winter feed. These latter will help out materially during the late fall and winter seasons.

As a rule the month of August has found gardening operations rather at a standstill but there is no reason why most any of the crops should not be planted, provided sufficient water is given to put the ground in good condition before sowing the seed. With one or two irrigations following, this will give a crop of most any of the vegetables and they will thrive even better from this time on than during midsummer.

Plant onions for a winter crop. The early varieties should be chosen, such as White Queen, Mammoth Silver King, or Bermuda. These will be ready to harvest during February and March at a season when onions are always a good price. The White King will produce more quickly than any other variety. Planted in the usual way onions require four pounds of seed to the acre, and there is probably no crop raised that is more profitable, but they require close attention and considerable work.

GARDENING MANUAL

The Home Vegetable Garden, by Adolph Kruhm, published by Orange Judd Company, New York, $1 net. The Cultivator will be glad to secure the book for its subscribers at this price or, including a year's subscription to the Cultivator, at $1.85 postpaid.

The book is written for the eastern gardener largely, yet is filled with information for gardeners everywhere. The author is a gardener of long experience and he has many most practical hints for making and caring for the garden, especially as to securing largest returns. It is particularly valuable for the beginner and the small home gardener.

The following abridged table of contents suggests the completeness and practical value of the information contained: Location, Soil, Preparing the Ground, Spading or Plowng, Fixing the Planting Season, Putting Seeds in the Ground, Depth to Sow, Keeping Records, Successive Planting, Crop Rotation, Intensive Cultivation, Hotbed Construction and Various Classes of Garden Vegetables, with a Vegetable Planting Table. There is no detail overlooked, and yet the book is a model of conciseness, with all its information readily available. Beautifully printed on heavy wove paper, 24 full-page illustrations from photographs.

The Ornamental Garden

THIS MONTH IN SOUTHERN CALIFORNIA

Written for the California Cultivator
By O. M. Morris

It has frequently been said that Southern California has two seasons of springtime, the commencement of this month being the second spring or planting season. Everything in the list of flowers and vegetables which is timely for March planting is in season for planting during August. This applies to the entire list of perennials for spring flowering. If planted soon you will have strong plants for bedding in about three months.

Californians should feel especially called upon this year to plan ahead to make the state more beautiful than ever in order that we may hold our reputation as a floral state when our visitors come next spring. We want to keep them, or some of them, and every attraction will assist. The school children of the city have been enlisted to the number of 30,000, we are told, and prizes are being offered for best results. We should all get busy and work to beautify our city—and all of California.

Among the old-fashioned flowers which appeal to every one are the delphinium, snapdragon, campanula, hollyhock, gypsophila, Mexican and California poppies and petunias. Some of these have been so improved as to no longer be eligible to the "old-fashioned class." I lately saw several hundred plants of the Chateris hollyhock in full bloom which formed a most delightful picture. These are more dwarf than the older class and the flowers are much more compact on the stem. They are very large, double and crepe-like, and come in most delicate shades. Another splendid sight was a large bed of the new auriculate flowered Sweet William (Dianthus barbatus hybrida). This is strictly a novelty of great merit. Heretofore this class has required two seasons to come into bloom, but hybrid seed planted last April is now in its full glory, commencing to bloom in three months from planting. The flowers are larger and more diversified in form and color than the old kinds, some of the individual blossoms measuring one and one-half inches across, and the heads six to eight inches, with splendid stems. As a rule the head is less compact than the old type. It shows its parentage very strikingly, Dianthus Barbatus x D. Laciniatus.

This is the particular time to plant stocks, pansies, annual phlox, calliopsis, gaillardia, snapdragon, calendulas, candytuft, centaureas, cosmos dianthus, poppies, gypsophila, mignonette, forget-me-not, salpiglossis, schizanthus, scabiosa and the winter flowering sweet peas. This list does not cover all, but the leading items that are in season.

Care should be taken in preparing the pansy bed to have it well shaded from the sun at this time. The best results are obtained by selecting a small bed in the garden and making a frame six inches by one foot deep, and after seeds are planted, cover with burlap or good muslin and keep well watered. The other varieties mentioned do not require so much care, but a little shade of brush or a coarse straw mulch would be advisable, as the ground dries so quickly, and if freely watered the bed is apt to crust over and prevent the plants from coming through. Small branches with the leaves on are fine for this purpose.

ATTRACTIVENESS OF THE COUNTRY HOME

Here are some sentiments taken from recent publications which express the lure of the country for the boy or girl who is so fortunate as to live within reach of country sights and sounds.

"A child whose early years are spent largely in the country will fondly remember his youth and his beloved animal companions, for country life for a child is rich with happy associations, while the youth of a child kept constantly in the city is a starved sort of a thing."

"When we say widen the outlook for the boys and girls we do not mean, that they must go away from home to find the world. If you will just show them that the world is right under their feet and over their heads, and that they have all the science right at hand, and all the arts for that matter, they will not wander from home. Still it is necessary to furnish them intellectual tools and stimulus in the way of books and magazines. Unfortunately, most of our country homes have only those papers that give a questionable lot of passing information."

"A country cannot hope for agricultural prosperity unless the face of the youth of the land is turned toward her fields and meadows, and the boy of this country, alert, eager, questioning, will face the direction of most vital interest—the city, if it offers the greater thrill and opportunity—or the country, if it beckons with big enough call to the pulse of the youth. But the appeal has got to be geunine; it has got to flount a banner and stir the blood and promise some sort of a tangible victory.

Now is the time to consider the plans for making the surroundings of the country home attractive, that environment may exert its strong influence in the right direction. The tin cans and other unsightly accumulations of rubbish should not be a part of the memory of home which any child carries into adult life. A few seeds of vines planted where needed will make a thing of beauty of some ugly object which cannot well be removed, and "a thing of beauty is a joy forever."

This is a practical phase of home life which should not be crowded aside for what may seem to be more immediately remunerative interests. Make home surroundings attractive and beautiful and so increase the hold of the country home on the young folks.—Virginia H. Corbett, Colorado Experiment Station.

Do not plant shade-trees too near the house. Give the air a chance to circulate round and through the house. Set the trees so as to shade windows during the hottest hours, if you want them shaded, but never close enough to prevent the air from entering the windows freely.

The blooming season of almost all annuals may be greatly prolonged, not only by picking off the seed heads, but by cutting back severely, the entire plant, which will, except in a season of severe drouth, make a fine, new growth and blossom profusely. This is especially true of the cornflowers or bachelor buttons, marigolds, larkspurs, and candytuft, and also of those general favorites, the nasturtiums, or tropaeolums, not, however, taking off the central stalks of these, but picking closely every day to prevent the formation of seed.

Asters unquestionably take rank as the finest of midsummer annuals, and their development and training will amply repay any extra care that may be bestowed. They do not thrive in stiff clay soils, and before sowing the seed or transferring from the hotbed the border designed for them should have a specially prepared soil of loam, rich compost and sand.

Do not plant flower-plants too close together. Verbenas should be at least 18 inches apart; petunias the same; phlox a foot; balsams a foot; pansies 10 inches; zinnias 18 inches; marigold two feet; poppies 10 inches. If flowers are too close in the bed they will not make as thrifty a growth nor will the flowers be as large and plentiful.

If the lawn is a little bumpy, fill the depressions a little at a time with a fine garden soil. Put half an inch of soil on at a time and let the grass grow through it before putting on any more. In this way a lawn can be made smooth in the course of a season or two without being torn up and lying bare for months.

Keep flower beds out of the center of the lawn. They show with better effect if used as borders for walks and around the sides of the lawn.

Do you want a soft, thick turf on your lawn? If so, mow it often and let the clippings lie where they fall. They will soon settle in the grass and after a while they will make a soft cushiony coat, which keeps the soil from drying out too much and fertilizes it as they decay.

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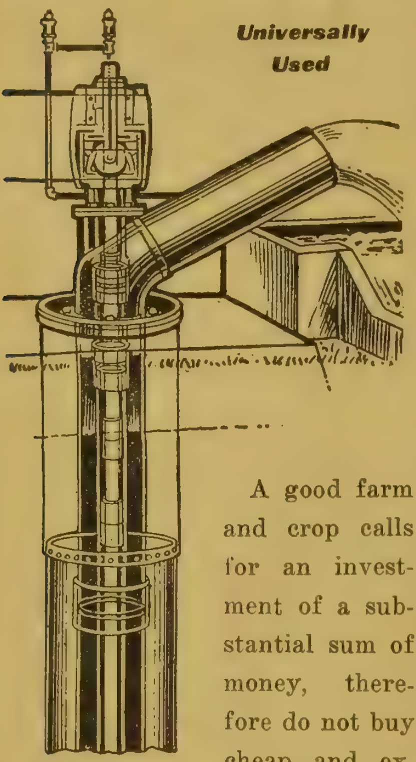

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THE WALNUT PROTECTIVE LEAGUE

On June 18 a representative meeting of walnut growers and shippers was held at 313 Fay building, Los Angeles, for the purpose of discussing the advisability of forming a walnut league which would be representative of the entire industry in California, and after a lengthy discussion, the following resolutions were adopted:

Resolved, That is is the sense of this meeting, after careful consideration, that the walnut growers, shippers and persons interested in the walnut industry, do forthwith proceed to form a voluntary, unincorporated organization to be named "Walnut Protective League."

Resolved, That the secretary, in conference with Mr. Farrand, reduce to writing the plan outlined and agreed upon by the meeting today and cause the same to be submitted to the various growers, shippers and others interested in the walnut industry, a general outline of the proposed plan to be so submitted, to be substantially as follows:

1. That the name of the organization shall be "Walnut Protective League."

2. That the purpose for which the league is formed is to handle all general questions which affect the walnut industry at large, such as legislation, state and federal, transportation, and any and all other questions affecting the upbuilding and protecting of the walnut industry, but without reference to and excepting the various methods of marketing.

3. That membership in the Walnut Protective League shall be entirely voluntary and all growers, organizations of growers, or shippers of walnuts, are eligible to membership in the league, and all such persons are urged to identify themselves with and to become members of the league for the purpose of aiding in the accomplishment of its purposes and to participate in the benefits to be derived from its formation.

4. That funds for carrying on the business of the league shall be raised by general assessment upon the nuts shipped by its members, such assessments as may be necessary to be made from time to time by the executive committee of the league which is to be provided for, provided that no one assessment exceed one cent per hundred pounds upon the basis of walnuts shipped by each member during the past season.

5. That during the year 1914, a membership fee shall be charged each member joining the league, of one cent per 100 pounds on shipments made during the shipping season of 1914, payable to the league not later than January 1, 1915. After the year 1914 the membership fee shall be ten cents per ton on shipments made by the member joining, during the season immediately preceeding his becoming a member.

6. That the affairs of the league shall be handled by an administrative committee and by an executive committee to be selected by the members of the league, which committees shall have such power and authority as the members themselves shall determine.

7. That the members of the league shall provide for the election of a president and vice-president, a secretary, and a treasurer, and shall prescribe their qualifications, the president and the vice-president to be members of the executive committee; compensation, if any, for all officers and employes of the league to be fixed and determined by the executive committee.

8. That membership in the league may be cancelled at any time by any member by filing with the executive committee of the league, notice in writing of his resignation or withdrawal.

Be it further resolved, that the secretary of this meeting be instructed to circularize prospective members, furnishing them copies of the proposed plan of organization, and if deemed advisable to call personally on any or all such prospective members to solicit them to become members of the league.

Further resolved that when this meeting adjourns it adjourn subject to the call of the chairman who is authorized to fix the time and the place of holding a meeting of all persons desirous of becoming members of the league upon the plan outlined.

There seems a great need for a closer union amongst those interested in the walnut industry in California at this particular time. Legislation is now pending, which if not combated will greatly increase the cost of production, harvesting, packing and shipping of walnuts, including the probability of an advance in freight rates. Every person in any way interested in the producing, packing or shipping of walnuts should be vitally interested in the work that the proposed Walnut Protective League will undertake. The proposed eight-hour law, as previously advised you, will work untold hardship to the walnut grower and packer as will also the minimum wage scale of $2.50 per day of eight hours. It is of the utmost importance that we have the help of the entire industry at this particular time in order to fight this adverse legislation. Money is not the only thing that is necessary. Of as much importance is the moral effect that such a league would have in appearing before legislative bodies. It is a well known fact that no one shipper can go before such legislative bodies and present such problems affecting the industry generally, and receive anywhere near the amount of consideration as could the representatives of the league, where it could be shown that practically the entire industry was represented by the organization. We must have a strong union embracing the whole industry to forcibly present the growers' side of these various problems.

The cost of membership in the league, as you will note, will be a very small item. It is doubtful if an assessment of over one cent per 100 pounds of nuts shipped will ever be levied during a single year. Undoubtly there will be years when assessments will be skipped altogether, and in comparison to the work the league can do, this cost is infinitesimal.

It might be well here to review a few of the accomplishments of the Citrus Protective League, a similar organization handling the general problems which confront the citrus industry. This league was organized eight years ago. They have never made a single assessment of over 25 cents per carload on fruit shipped by their members.

The first great work of the Citrus Protective League was their successful efforts in reducing the railroad rates on oranges from $1.25 to $1.15 per 100 pounds. This was accomplished in February, 1907. Since that date this saving of 10 cents per 100 pounds has amounted to $6,172.000 to the citrus industry, and at the present rate of shipment is saving the growers about a million dollars annually. The ruling they secured regarding refrigeration of citrus fruits is saving the industry $50,000 annually.

It was directly through the efforts of the Citrus Protective League that the lemon rate case was fought to a successful conclusion whereby the rate on lemons was reduced from $1.15 a 100 pounds to $1.00. This reduction is saving the lemon growers a quarter of a million dollars annually, and the railroads have had to refund as excess charges to the growers, approximately $845,000 as a consequence of the successful fight made by their protective league.

The Citrus Protective League also carried on a great fight against reductions in the tariff in face of an organized effort on the part of the New York importers to put citrus fruits on the free list. The league was successful in having retained a half cent a pound duty on lemons and oranges.

The Citrus Protective League has also done a great deal of good for the industry in such matters as securing from the state and federal governments the assistance of the highest class of experts to make investigations and reports as to the proper methods of growing, shipping and packing citrus fruits and in quarantine legislation and in securing experts to combat their fungus diseases and other pest problems. They have also done a great deal in frost protection work.

The total cost of maintaining the Citrus Protective League during the eight years it has been organized has averaged 60 cents per car per year upon the shipments of its members. This represents approximately 1½ mills per box and has been the means of saving to the orange growers in freight alone 7.2 cents per box and to the lemon growers 12.6 cents per box in the last few years. This to say nothing of the general benefit to the industry as a result of their many other fights and investigations.

There is absolutely no reason why the walnut men cannot organize as effectually as have the citrus men. A world of good can be done which will be of equal benefit to all concerned in the walnut business, whether they be independent growers, shippers or associations. It is therefore to be hoped that a general response may be had to this urgent call.

While the members of the California Walnut Growers Association are shipping a majority of the California walnut crop, it has been the expressed desire of the officers and a majority of the directors of the California Walnut Growers Association that the league be controlled outside of the California Walnut Growers Association. This is the policy which has been adopted by the Citrus Protective League, as their president, vice-president and several members of their executive committee are not members of the California Fruit Growers Exchange, and this same policy will undoubtedly be followed in the organization of the Walnut Protective League.

As soon as sufficient applications (form of which is given below) are signed to assure the league success, a meeting will be called for the purpose of electing permanent officers and members of the various committees, and, while you will note that no membership fees are payable until January 1st, 1915, funds have been arranged for, for the fight that must be promptly undertaken in order to defeat the eight hour law and minimum wage scale in the coming election.

* * *

The undersigned hereby agrees to become a member of Walnut Protective League in accordance with the above outline and to pay the membership fee and assessments as therein provided, so long as he will remain a member of such league. Dated..............

....

By ....

Address ....

Estimated shipment for 1914,....................

tons.

8 Hour Resolutions

These are "For Sure" Resolutions this Time and from the Morgan Hill Farmers Union.

We gave at one time "resolutions" which were not resolved by the Rucker Farmers' Union, though we thought they were when sent to us. They were simply "resolutions for discussion," but not endorsed by the membership. Now, however, comes a series of resolutions passed by the Morgan Hill branch of the Farmers' Union:

"Whereas, The basis of all prosperity rests with the productivity per acre; and

"Whereas, The industrial advancement of the people as well as the wealth and prosperity of the individual are alike solely dependent upon the financial condition of the farmer; and

"Whereas, The enactment of the proposed general eight-hour law would cripple the fruit, farming and allied industries of California and paralyze industrial progress and business; and

"Whereas, Increased taxation, accident insurance, higher wages, uncertain crops, all tend to add to the farmers' burdens; and

"Whereas, California, by reason of her geographical position, is already badly handicapped in reaching the domestic as well as foreign markets; and

"Whereas, The laboring people would be deprived of a large portion of their means of support by reason of the spoiling of much of the fruit crop; and

"Whereas, The immediate result of such a law would be the great depreciation of property values; and

"Whereas, No real benefit could possibly accrue to the working man or to anyone else; be it

"Resolved, That the Morgan Hill branch of the Farmers' Educational and Cooperative Union is opposed to the enactment of a universal eight-hour law; and be it further

"Resolved, That it is the sense of the Morgan Hill branch of the Farmers' Educational and Cooperative Union that organized effort should be made at once to educate the voters, especially of the towns and cities, who know little or nothing of the farmers' needs, to the end that they may not be induced to vote for the amendment calling for such a law.

AVOCADO NOTES

Written for the California Cultivator

By O. N. Cadwell, Carpinteria.

As there is more or less said or written about the avocado, or alligator pear as some call it, I will venture to give a little of my experience:

YOUNG AVOCADO TREE

Photo of Avocado Taken by Joseph Sexton June 19th. Loaded with Fruit Yet Only Seven Feet High.

In June, 1911, I set about 50 seedlings. About three-fourths were small plants, running about five to eight inches, balance about 20 inches high. I estimated their age at one and two years.

They were planted in ordinary hill or mesa land; part rather shallow soil with a hard stony subsoil. The trees have all grown thriftily and have not suffered any from frost.

Last year, 1913, a few of the trees blossomed, four or five of them maturing specimens of the fruit. One tree bore some three dozen, the others one to five. All purple thin-skin, averaging about four ounces each in weight, and compared to the larger ones on the market were as good in quality. Season November to March. This year nearly all the trees blossomed and have more or less fruit. Some are loaded and bending to the ground.

The trees, all being seedlings, there are no two just alike, differing in foliage or growth, and the fruit seems to differ as much as the trees. We hope to get one or more varieties that will be well worth growing. The whole thing is an experiment with me. The trees are beautiful all the time.

Joseph Sexton of Goleta is much interested in the growth of the avocado and is very generous with his time and money in testing varieties from many places to find out the very best varieties that can be successfully grown. He certainly deserves a great deal of credit for his work and undertaking.

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A Journal of Horticulture and Agriculture

By

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Thursday, August 6, 1914

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SUGAR

The beet sugar manufacturers are making an appeal to the housekeepers of California to use the home product. With duty free sugar soon to come, it is a question whether sugar beet growers and manufacturers will remain in business, and the only way that coast people can aid is to increase the consumption of this one of the great products of the west. We believe that in every way beet sugar is the equal of cane sugar, although there has been a prejudice against it on the part of some housewives. Chemical analysis and experiment station tests make the point that wherever cane sugar may be used, beet sugar may take its place.

PROTECT "COOPERATIVE."

The suggestion was made at the recent state fruit growers' convention that there should be legal protection given to the word "cooperative" and to all words which might be used to convey the impression that a concern is a cooperative one, when, as a matter of fact, it is simply a corporation handling produce for profit. There have been cases where producers have been misled by the use of the word "cooperative" when there was no cooperation. Cooperation has enough problems confronting it without having to beat down a prejudice which may be established by the transactions of concerns which have claimed to be cooperative. Let our legislators consider this matter.

A TON OF WATER

We have seen the statement in an eastern farm paper that there are plenty of women in farm homes engaged in lifting about one ton of water every day. This certainly seems an immense load to put upon the farm woman. Possibly the figures are manipulated slightly so as to make a good story, for we imagine but few farm women of even sturdy stock would stand up under such a continuous load. But sure it is there are too many homes where the working appliances are of the crudest and where the home keeper becomes a mere burden bearer. There are so many labor-saving appliances which may economize effort that it is inexcusable to put such a load upon her.

COVER CROPS

Of all the questions that come to the Cultivator none are more perplexing and none come oftener than those regarding soils and how to keep up fertility. Farmers as a rule recognize the fact that the securing of the requisite chemical elements for plant growth is comparatively simple, but to keep up a proper physical condition is vastly more difficult. We have gathered a fund of information along this line which will be used in our next issue. Stable manures, cover crops, green manuring crops, or any other means of securing greater fertility will be discussed. It will be a symposium, for we will have opinions from producers in many parts of the state—and not only opinions, but facts developed through series of experiments. It will be a most interesting number and we believe will aid materially the farmer who is seeking for information as to how to maintain his soils in condition of highest productiveness.

BETTER TOOLS

The Associated Farm Papers, of which the Cultivator is one, have set about to secure information as to the work of agricultural colleges in training pupils in the handling of tools and in the advantages of improved implements and farm machinery. Sixty-seven colleges were addressed. Fifty-six responded, and of these 54 teach carpentering, 51 blacksmithing, 36 electricity, 20 painting, 48 cement construction and in 48 of the schools answering it is necessary for the student to attain proficiency in these branches in order to get a diploma. In 23 of the schools students of both sexes take up the manual work, and in 54 of the 56 the students are taught specifically the advantage of good tools over poor ones. In these 56 colleges the attendance is 25,916, and in answer to a general question as to other schools in the same state which give manual training the general answer was: "The great majority of high schools." Another few years and we believe the advantages of manual training will be even more apparent than they are today.

WAR

With wars and rumors of other wars yet to come, it looks almost as if all the governments of the world were entering into the turmoil. We sincerely trust the western hemisphere will remain out of the war zone. There will be enough for America to do to feed the combatants on the other side of the ocean. With the Panama canal open the Pacific coast will be able to do its share and reap certain benefits. There never seemed to be a better opening for the dispersal of our crops than there is at this moment.

Let us be prepared to the fullest to send through the canal in largest quantity California wheat and other grains, beans, potatoes, tomatoes and canned fruits, both dried and canned and even fresh. Then we should be ready to ship more beef and pork. The hay producer is complaining because of no demand for an enormous crop, and yet the world is hungering for more meat and is offering long prices. The crying need of California is more live stock. If war continues for years, as it may, big prices will be paid for beef, for pork and for draft animals. Fuel oil is already feeling the stimulus. The increase in these industries will give rise to others. Let the farmer be wise and take advantage of Europe's turmoil. It is not to our liking; the suffering will be great, but if it cannot be prevented we may at least provide much which will lessen Europe's hunger.

TESTING COOPERATION

Papers published in the lima bean growing sections, especially of Ventura County, report the fact that assaults being made upon the cooperative association selling the products of the lima bean ranches may prove successful. Perhaps with these attacks from outside the association there are some faults within, but we believe the greatest weakness of these associations is within their own membership. It takes some little faith in our neighbor and a thorough understanding of marketing conditions to be a good cooperator. This particular association was started to aid the small growers and the small growers were amongst its first members. The larger growers finally recognized the worth of the institution and the necessities of the marketing situation and united in supporting it. The larger dealers who were not reaping the benefits endeavored in every way to weaken the hold of the association upon its membership. This has finally resulted in the dropping away of a very large proportion of the smaller producers, and their stocks have been used to batter down the prices of their cooperating neighbors.

We hope the bean growers will recognize the necessity of holding together, for the bean industry means much to California and without the protection of cooperation we believe it will not continue to be as large a factor as it has been.

Agricultural News Notes

Hares and rabbits exported from New South Wales in 1913 amounted to 6,940,965 pairs, valued at £373,633. The carcasses are frozen before shipping.

Many Virginia apple growers have reserved space in ice and cold storage plants for their entire apple crop and will hold to market themselves instead of selling to buyers.

In the second North Coast egg laying contest concluded the last day of March on the Grafton experiment farm in New South Wales, the average number of eggs laid per hen for the year was 190. Most of the fowls entered in the competition were White Leghorns.

Japan's minister of agriculture and commerce has issued an ordinance, which came into effect on July 1, prohibiting, for the purpose of preventing the propagation in Japan of the Mediterranean fruit-fly, any importation and delivery, whether as cargo, as travelers' effects or in parcels of fresh fruits, vegetables, berries, seedpods, etc., which have been shipped from Hawaii or have been landed there.

A special train consisting of 10 cars of various refrigerating systems was sent to Siberia from European Russia in July to test the possibilities of a better exchange of products and to determine better means of distributing perishable freight. On the way out the cars will carry loads of fruit, and, as emptied in the various Siberian towns, will be filled with butter and meat to be carried as far east as Vladivostok.

A diversified farming campaign lasting three weeks has just ended in Southern Mississippi. The United States department of agriculture, the Mississippi state department of agriculture and the Mississippi agricultural college were the forces directing the campaign. The people were urged to abandon once and for all the one crop system of farming, the growing of cotton exclusively. This system was held accountable for some of the recent bank failures in the Mississippi valley.

In anticipation of the opening of the Panama canal many vessels have applied to the surveyor of the port of New York for measurement under the canal rules. There is no fee for measurement and foreign nations also can measure for the canal traffic. Under the canal rules it will cost the American steamships Kroonland and Finland $10,725 apiece to pass through the canal, or more than $21,000 for the round trip from New York to the Pacific coast ports. For a fair-sized freighter the tolls will amount to about $5000 and for an auxiliary motor yacht about $78.

An agricultural experiment station is to be established in Libya by the Italian government in the oasis a short distance from Tripoli. Experiments will be carried on in cultivation by irrigation and by dry methods and complete small farm units conducted to ascertain the value of a given equipment. Special attention will be paid to animal industry, the improvement of native species, such as the camel, donkey, sheep, goat, cow and horse, and to the increase of grazing lands and provender. A depository for farm implements and tools will be established, not only for the needs of the station, but to lend or hire for private trials.

Agricultural News Notes of the Pacific Coast

Northern California

Serious mountain fires have been raging in Siskiyou County.

The Gravenstein Apple Show is being held this week at Sebastopol, Sonoma County.

The Merced district claims over 1200 cars of sweet potatoes for this season's output.

According to the California Fruit Distributors the total shipments of deciduous fruits to July 21 were 3,777¾ cars.

Butte County apple growers are planning to participate in Watsonville's California Apple Show to be held in San Francisco.

A plan for a mammoth Butte County Fair, to be held for a month in Oroville in 1915, has been suggested by one of the county supervisors.

Much interest is being shown in the emergency potato convention which will convene in Stockton September 9, for a three days' session.

The thermometer has been staying close to the 100-mark in the hop fields in Mendocino County, and hop men are happy, as the hot weather insures good crops.

The survey of the Pitt River Irrigation and Flood Water Storage Project has been ordered. The reclamation service and Shasta County are financing the survey.

Tuolumne County's honey exhibit which was being built in the comb has unfortunately been destroyed by fire and the bees' work of many months is lost.

At the recent meeting of Pajaro Valley apple growers at Watsonville action was taken to bring a standard pack bill before the next legislature for the purpose of regulating shipments of cull fruit, both into and from the state.

From Newman, Stanislaus County, comes the report of an over-supply of crickets. It is stated the insects were attracted by lights in the open saloons and came into the bars in such numbers that the saloonkeepers were forced to close up.

The list of prizes has been published for the Ukiah Hop Festival and Mendocino County Fair to be held in Ukiah during September. The committee of arrangements states that many of the cash prizes are larger than those offered at the state fair.

For the purpose of cooperating with its newly appointed farm adviser Napa County has been divided into 13 farm bureau centers. The governing power of the county farm bureau is placed in the hands of 17 directors, one from each of the 13 centers and four at large.

The Inland Waterways Association of California has arranged for a number of meetings to be held in the Sacramento and San Joaquin Valleys on the following dates: Willows, August 5; Oroville, August 7; Marysville, August 8; Bakersfield, August 12; Porterville, August 13; Visalia, August 14; Hanford, August 19; Madera, August 20; Modesto, August 21. The object of the meetings is to acquaint all sections of the great valley with the work and purposes of the association.

Central California

Madera County has a new farm adviser appointed August 1. He is Thomas C. Mayhew.

October 14-15 has been selected as the date of the Creamery Operators' Convention at Modesto.

Apiarists of Kings County are gathering their honey crop. The general estimate is that it will be light.

The Stanislaus County Poultry Association held a meeting July 30 to discuss arrangements for their fall show.

Directors of the Kings County Fair Association have announced that the University of California will this year exhibit at their fair.

Turlock cantaloupe growers are this year shipping to eastern markets for the first time. The first casabas are now being shipped.

Sugar beet growers in the Alpaugh district of Tulare County are now delivering. The beets are showing a good percentage of sugar.

Fumigating operations in the citrus orchards of Porterville and Linsay, Tulare County, are in full swing. Every available outfit is being secured.

Directors of the Del Monte Junction Growers Association closed the membership roll for this season the first of August. It now has about 20 members signed up.

The California Cured Fruit Exchange has selected a new manager in Henry M. Ellis, and has also announced its intention to remove the headquarters to San Francisco.

The suggestion has been made that the winter fair held in Visalia, instead of being termed a citrus fair, shall be called the Tulare County Citrus, Grape, Dairy and Agricultural Fair.

Turlock reports melon prices "shot to pieces" as a result of the tremenduous crop that is being harvested. The season opened July 6 with an $18 a ton price, which has now dropped to $2.

Peach growers in the district about Dinuba, Tulare County, are discussing the need of a cannery to save them another year from the loss they have suffered this season in being unable to dispose of their fresh fruit at reasonable prices.

The Visalia Cooperative Poultry Association has filed articles of incorporation. One of the directors states: "We saved enough on our feed purchases alone to warrant the association's existence."

The California Associated Raisin Company shipped last Sunday 60 carloads of raisins. Moving pictures of the train were taken before it left Fresno, to be used at the Panama Pacific Exposition. The train was placarded, every car bearing a raisin banner.

The newly organized Comet Citrus Association of Porterville has elected the following officers: A. G. Schulz, president; I. Jay Boothe, vice-president; E. H. Strong, treasurer; F. L. Kennedy, secretary and manager. The new directors are: A. G. Schulz, P. M. Schofield, E. H. Strong, I. Jay Boothe and H. F. Brey.

Southern California

The Pomona cannery is putting out 60,000 cans of peaches a day.

Riverside is planning an Orange Congress, to be held in April, 1915.

One rancher in San Jacinto last week lost 65 acres of wheat by fire.

An addition to its lemon house is being built by the Fillmore Citrus Fruit Association. The improvement will be finished in time for the navel crop.

The U. S. department of agriculture has discovered that some oranges are being shipped to Eastern markets under false descriptions. Some of the boxes are not labeled at all.

Small express shipments of early grapes were sent from the Coachella Valley in Riverside County during the entire month of June, mostly to Arizona, Utah and San Francisco.

Committees representing the County Fair and the proposed Orange Congress to be held in Riverside next April are asking the county supervisors for aid for the two shows.

Citrus men of Southern California are somewhat exercised over the unusually large second bloom on the orange trees this year. Navels and Valencias alike are showing heavy bloom.

"Under the new marketing policy of the Walnut Growers' Association growers will save $60,000 in brokerage on this season's crop," says President Hargraves of the Orange Association.

The Palo Verde Valley Boosters' Association is working to secure a government station for the Palo Verde Valley. It will also place exhibits of products at the county, state and Pan-American fairs.

A recently rendered decision of the interstate commerce commission in the case of Pacific Fruit Exchange against the Southern Pacific Company, points to reductions in rates on deciduous fruits from California to southeastern points.

Orange County is trying to decide the question, "Whose business is it to cut weeds along the roadside?" County Horticultural Commissioner Bishop states that he believes the recently appointed board of forestry has jurisdiction over the weeds.

Supervisors of Orange County have delayed action on the formation of a storm water district to protect Anaheim and surrounding territories from the overflow of the Santa Ana river. Action has been delayed to give protestants a chance to state their views.

At the recent meeting at Fillmore of the Farmers' Club, R. S. Vaile announced that his resignation as county horticultural commissioner was before the supervisors, as he is to have charge of a new bureau of practical farm work at the state citrus fruit experiment station.

The Los Angeles County Good Roads Association has just been organized with the avowed object of "aiding to procure county, state and national aid for permanent improvement of the county highway and toward bringing about a uniformity in traffic ordinances of the various cities in Los Angeles County."

The Coast

The University of New Mexico has bought over 2000 acres of land adjoining its campus.

A number of small forest fires broke out in Oregon the latter part of July. but were quickly brought under control.

Drouth over Manitoba, Saskatchewan and Alberta is causing great loss to wheat fields. In fact the crops are burning up.

Eighty-two hundred head of cattle have been distributed among the Crow Indians of Montana. The cattle are Hereford grades.

The range in Colfax County, New Mexico, is unusually fine. Ranchers have been able to take beef right off the range without feeding.

Grasshoppers are reported as doing serious damage to alfalfa in Umatilla, County, Oregon. Grasshoppers are also attacking orchards.

Spokane County, Washington, is reported as having a bumper crop of Wagener apples, with Rome Beauties and Jonathans about average.

Prof. O. M. Morris of the agricultural college at Pullman, Washington, says that the way to stop the spread of fire blight is to stop watering the trees

The Farmers Union of Arizona has put itself on record as opposing the proposed $10,000,000 bond issue for transcontinental highways and reclamation.

Grasshoppers are reported so numerous in Umatilla County, Oregon, that they will greatly reduce the third cutting of alfalfa. They are also attacking some orchards.

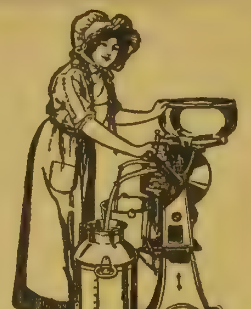
A heavy yield of peas has been packed by canneries in Webber and Morgan Counties in Utah. The canneries will next work on tomatoes, which also promise a big crop.

Officers of the Farmers Union of Walla Walla, Columbia and Garfield Counties of Washington have filed with the secretary of state an argument opposing the eight hour law.

Experts from the United States department of agriculture have spent several days in the cotton fields of Salt River Valley, Arizona, rogueing the Egyptian cotton. Seed from these fields will be used for planting by members of the central association next year.

Fruit growers of Keesling, Washington, in their local association, have declared themselves in favor of pooling the entire fruit crop of the Spokane district as a marketing measure that will lead to greater uniformity in price and insure against loss to individuals.

The Apple Growers Association of Hood River, Oregon, at its recent annual meeting adopted new by-laws whereby each member shall have, in addition to his membership vote, a voting power in direct proportion to the tonnage delivered by him to the association the previous year. One vote is given for every 100 boxes of pears, strawberries and apples and every 200 boxes of peaches and cherries. Also provision was made by which members can be expelled on 10-day notice for failure to comply with the rules.



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THE "DOG DAYS" ARE AT hand when dairying is most difficult without a separator and when the increase in quantity and improvement in quality of cream and butter are greatest through the use of a good separator.

THEN THERE IS THE GREAT saving of time and labor, which counts for more in summer than at any other season and often alone saves the cost of the separator, aside from all its other advantages.

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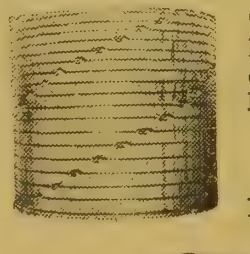

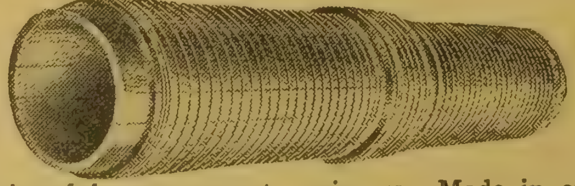

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From 500 to 500,000 gallons capacity.

Built to suit All Uses and Users. Cheaper than Metal Tanks, last 10 times as long.

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Machine Banded or Continuous Stave. For Water Supply, Irrigation or Power.

All Designed by our expert engineers. Made in our own immense factory from clear, air-dried redwood, selected from Air-Dried Stock of 40 Million Feet, which we carry at our plant at ALL times. Write Us for Prices.

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SEMPERVIRENS CACTUS FARM
JOHN ZUUR, Proprietor
Ask for 1914 Catalogue *SANTA ROSA, CAL.*

Live Stock and Dairy

THE LITTLE RIVAL OF THE COW

Written for the California Cultivator
By Jean A. Koethen.

Almost in the shadow of the Arroyo Seco bridge at Pasadena a slender little woman, Miss A. E. Wood, is pioneering in a business which may some day become as common as the breeding of chickens, the breeding of Swiss goats for family use and the production of milk which is a little purer and richer than that of most cows and better than any other for babies and invalids.

It surely should be better than any other, for the price it brings, 25 cents per quart, is prohibitive for ordinary people. Even at that price Miss Wood says there is little profit in the dairy, for babies are hard to please, and if the milk does not agree with them she must look for other customers. It is very expensive, too, catering to babies. An ordinary goat, such as you and I might keep in our back yards, may have for the green part of its ration rose cuttings and trimmings from any shrub or tree, such as I saw Miss Wood feed her stud. It may also have potato and apple parings, carrots, turnips, and for aught I know, tin cans and old shoes. The goat that supplies milk for delicate babies gets no such luxuries as these. Alfalfa at $16 a ton, or clover, if it can be had, are the only greens permitted. Even the alfalfa does not always suit. Sometimes it is too stemmy. Then the goats take the leaves and the stems go to the chickens.

The great advantage of goats' milk over cows' is, that it is absolutely free from tuberculosis germs. It is also richer than cows' milk and contains less curd.

"The keeping of a goat for family use is getting to be quite a fad," said Miss Wood. "Whenever I am ready to part with a doe I find a customer waiting. The demand is always greater than the supply. A goat, you know, is much easier to keep than a cow. It can be picketed in the back yard or tied on a vacant lot, requires but little shelter, eats the refuse from the kitchen and gives just milk enough for one family. A doe I have for sale now for a family that is leaving town has been giving from three and a half to four quarts for nearly a year, and has supplied the family not only with milk, but with all their butter. It is said that seven goats can be fed for what it would cost to feed one cow. I think, with the kitchen refuse and green stuff a family could provide, a goat could be fed for 10 cents a day. In that way you get all the milk you can use, and your butter beside, for the price of a quart of cow's milk daily."

These Swiss goats are known as Toggenburgs, from the name of their native valley. They are no longer imported, however. A hoof and horn disease is making great ravages among the goats on the continent, and a strict quarantine is maintained.

The average milk production of these goats is from three to five quarts daily, and a goat maintains her productiveness much longer than a cow after being bred. Miss Wood pointed out one doe that was bred 10 months ago and is still giving two and one-half quarts per day. When this doe was fresh she gave four quarts.

A doe never does her best the first year or the second. In fact it is not till she has been bred three times that she is really at her best. Does are not bred till they are a year old. There is no haste, for they are profitable milkers till they are 10 or 11 years old.

Miss Wood has two grades of stock, the pure-bred Toggenburgs, which are a soft brown color, and the grades or half-breeds, which are a grayish white. She is improving her stock as rapidly as possible, and will before long have nothing but pure-breds. A grade doe may be had for from $35 to $50, but a mature pure-bred Toggenburg costs $100. The grades are good milkers, but the pure-breds are better. A pure-bred kid is worth $75.

What do they eat, these high grade, pure milk producers? A balanced ration, similar to that of a cow, just what, Miss Wood would not say. "If I told you today, it would not be true tomorrow," was her smiling reply. "I am changing and experimenting all the time as I get new suggestions from the agricultural papers." In general, they have a mash of whole and ground grain in the morning, and alfalfa or clover at night—only two meals a day, for their busy mistress has not time to give them three.

Several kids were running about among the does, gentle little creatures, apparently more suitable for children's pets than for subjects of scientific experimentation. They are easy to raise, but are very sensitive to dampness and must be carefully housed at first. The old stock is indifferent to weather and sleeps out altogether when the nights are fair. A shed with a tight roof is at hand, however, and the gate always open, so that they may sleep in or out as they please.

Brutus, the stud, is the registered son of a four-quart mother, for inheritance is just as important among goats as among cows or fowls. He is a fine, handsome fellow, and the pet of his mistress, who never goes walking without bringing home some succulent dainty to tempt his appetite and cement his affection.

It was getting toward feeding time as I picked my way throug the corral and up the hill to the crest of the arroyo, and does and kids were crowded about the gate waiting to be called to their supper which was already carefully distributed through the mangers under the shed. Some of them followed me to the farther gate, feeling sure, no doubt, of the kindness and good will of any creature in petticoats, for they are like confiding children, these denizens of the Swiss mountains.

It is not the easiest work in the world, caring for a herd of from 12 to 20 milk goats, but Miss Wood likes it, and finds as much pleasure in the working out of the problems of feeding which every breeder must work out, as in the anticipation of the day when she can let the dairy go and devote herself to raising $75 kids for family use.

MARKETING ALFALFA ON THE HOOF

(Continued from Page 123.)

post, and a socket with pivot at bottom with another steel band to hold the gate post in place. The men shown in this picture, reading from left to right, are Mr. R. P. Cundiff, Mr. W. B. Phillips of Porterville, and Mr. W. E. Premo leaning against the gate. Mr. Premo is secretary and manager of the corporation, which owns 700 acres of alfalfa in this great ranch.

The watering arrangement cannot be fully shown, though a hint is given in the illustration where Mr. Cundiff and Mr. Phillips are standing by its side. The electric pumping plant is shown in the background between the two men. From that the water flows in underground pipe to the water stand pipe shown in the engraving. It is forced to rise almost to the top of this standpipe, when it flows over in a large stream to the underground pipe which carries it to a similar arrangement in the next corral, from that to the next, and so on from corral to corral, giving to each a perpetually renewed supply of fresh water. The large stream escaping at the lower end is, of course, used in irrigating the alfalfa. This pipe line is 4200 feet long. The association, or rather the Porterville Alfalfa Company, is a stock company organized under the laws of California, and handles this farm the same as it would any other business proposition. The officers of the association are: E. E. Graham, president; Wilko Mentz, vice-president; W. E. Premo, secretary and manager; J. A. Ulmer, F. S. Kennedy, G. L. Robbins, directors.

ECONOMICAL MILK PRODUCTION

The manufacturer perhaps more than the retailer looks closely after the matter of cost, knowing that his principal hope of making a good profit lies in attaining economy in the actual production of the article, for no profit can be expected if the seling is below the cost price.

Is not the dairy farmer a manufacturer? So it would seem to be wisdom to look the more closely after cost especially as he does not expect the selling price of milk to soar. Assuming that the farm is in good condition and carefuly handled, what does milk cost per hundred pounds? That can be ascertained only by keeping records of each individual cow.

This is all the more necessary because "men (and cows) were deceivers ever". They may appear to be good heavy producers, but their value as economical producers can only be determined when their yield of milk and fat is checked up by the scales and test. Of what use is it when the factory pays 95 cents per 100 pounds to keep cows whose milk costs $1.25 per 100 pounds just for feed alone? This is what often happens till cow testing is taken up.

It is quite possible to have one dollar's worth of feed return two dollar's worth of milk through good cows, that is cows selected by the test. This is both economical and profitable milk production. The average cow is not an economical producer because she has not been selected, but, like Topsy, "just growed". A dairy farmer will prove his busines ability as a manufacturer when the herd is composed of economical producers. Make each cow pay a good profit C. F. W.

Thoroughbred Poland China Swine
High Grade Stock of Best Strains.
Young Stock For Sale.
M. BASSETT Hanford, Cal.

EFFICIENCY ON THE FARM

One of the most frequent sources of loss on the farm is an insufficient return from work horses.

Have you satisfied yourself on the following points?

Do your horses earn enough to pay for their feed and care, and enough to meet the interest, depreciation and other expenses, as harness costs and shoeing?

It costs $100 annually to keep the average horse, in Minnesota, but this horse works only a little more than three hours each working day. This makes the horse labor cost approximately 10 cents an hour.

Do you handle the horse labor on your farm so that the annual cost of keeping your horses is less than the average, or so that the number of hours worked is greater? Both methods will reduce the cost of horse labor, but the latter offers by far the greatest opportunity.

Can you revise your cropping system so that fewer work horses will be needed, or so that the work will be more equally distributed and thus make it possible to employ them more hours each year?

Can you raise colts and thus reduce the cost of keeping your horses?

Can you arrange to use your work horses for outside work when not busy on the farm?

Can you reduce the cost of keeping each horse by feeding less feed or cheaper feed and still give a proper ration?

Farm work done with fewer horses means a saving of $100 a year for each horse not needed.—A. H. Bento, Minnesota University Farm.

DIPPING HOGS FOR MANGE AND LICE

Treatment of hogs for mange should begin with a vigorous scrubbing with brush, soap, and soft water so as to remove the crust. A variety of coal-tar dips are on the market. Most of these are quite satisfactory if of sufficient strength and warm enough (about 110 degrees. Do not boil). The hog should be given a good thorough soaking in the dip, not less than two minutes. The hog must go under, head and all, at least once. Treatment must usually be repeated one or more times at intervals of eight days. Treat the whole herd and do it thoroughly.

An effective dip can be made from crude petroleum as follows:

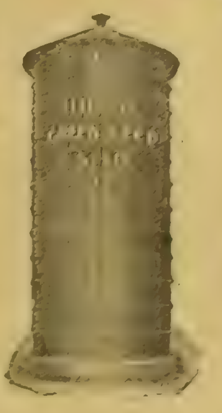
4 gallons crude oil
16 gallons water
1 pound soap.

The soap should be dissolved in the water by heating. An emulsion is then made by adding the oil and thoroughly churning the mixture. Water in different sections differs very greatly in the way it will combine with soap. If this amount of soap does not give a good emulsion simply add more soap. Avoid oily dips in cold weather.

While the hogs are taking the dip, thoroughly clean and then disinfect the pens. In case of true mange the fence posts, trees, and everything against which the hogs can rub must also be disinfected. Use a strong disinfectant and plenty of it. After treatment do not put the hogs back into lousy or mangy pens.—M. H. Reynolds, Veterinarian Minnesota University Farm.

We can only be valued as we make ourselves valuable.—Emerson.

Cut Your Cost of Producing Milk



One of our customers who is using two 20x40 silos says:

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Ideal Green Feed Silos are a De Laval Product, made of the best materials in the best equipped mills on the Pacific Coast, and in every essential feature are built to suit California climatic conditions and to produce good Ensilage.

You would not purchase a leaky can for preserving fruit. Why take chances on a leaky silo when you can buy a perfect Ideal Green Feed Silo.

Buy an Ideal Green Feed Silo Now

Write for latest circular A for full information.

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KELSEY TUBULAR COOLER
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The Kelsey Tubular Milk Cooler suitable for one milker, $19.75 complete. Two milker, $22.50 complete. Three milker, $25.00. Guaranteed for twenty-five years. Factory prices—no middleman. 10 per cent cash discount.

A MECHANICAL MILKER

We have just received three cars of Mechanical Milkers—the kind that we can recommend to our customers. A competent corps of experts ready to install and keep in order.

SEE OUR PRACTICAL DEMONSTRATION OF THE MILKER ON A REAL COW AT OUR NEW LOCATION, 818 SOUTH LOS ANGELES STREET.

Kelsey Dairy Machinery & Supply Company
OUR NEW LOCATION 818 SOUTH LOS ANGELES ST., LOS ANGELES

BUILD A SILO

If you want to save on feed,
Build a silo.
It will help in time of need,
Build a silo.
Build of concrete if you would,
Build of brick or build of wood,
Build of anything that's good,
But build a silo.

Dairy feeds are soaring high,
Build a silo.
Summer seems to be goin' dry,
Build a silo.
Cows, too, go dry fed on hay,
Sort o' seem to fall away,
They need silage every day,
So build a silo.

Pasturage costs quite a heap,
Build a silo.
Winter feeds are never cheap,
Build a silo.
Build it wide and build it deep,
'Cording to the cows you keep,
And for milk you'll never weep,
So build a silo.

That's the burden of my song,
Build a silo.
If you've cows you can't go wrong,
Build a silo.
Milk will flow and smiles'll come,
With the separator's hum,
And you'll shout "I'm glad, by gum,
I built a silo."

—Farmers' Guide.

Blatchford's Pig Meal

Weans them safely and starts them right.

100 lbs. makes 100 gals. of perfect, smooth nourishing milk substitute.

Free Folder and Prices on Request

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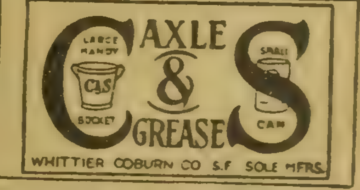

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The perfect construction of the Krogh Turbine insures the very minimum running expense. The automatic balancer eliminates practically all wear. There is absolutely no end thrust. Just a smooth, soft purr—and the full flow of water is always on hand.

Economy in first cost, too. No pit is required. The working parts are submerged under the surface of the water. There are many other valuable features described in the booklet 85 B.

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The Old Reliable
PeterSchuttler
is the Easiest Running Wagon

It is built in the honest old-time way, by expert wagon builders—in the World's Greatest Wagon Factory. That's why it stands the wear without repair, and gives greater service and satisfaction than any other. Your horses can do more work with a Peter Schuttler Wagon—because it runs so much lighter.

Peter Schuttler Roller Bearing Wagons
run 1/3 easier by reducing friction on the bearings. A Big Improvement.

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The 1914
CALIFORNIA STATE FAIR
At Sacramento, Sept. 12 to 19, Inclusive.
THIS YEAR THE BIGGEST EVER
A Few of the Features Include

¶Harness Racing for $30,000 in purses. ¶Second Annual California State Fair Round-up with thrilling Wild West Show. ¶Free Attractions, afternoon and evening, costing $25,000. ¶Competitive displays for $25,000 worth of premiums. ¶Band Contests for $3,000 in prizes. ¶Locomotive Head-on Collision. ¶Elaborate Fireworks Display nightly. ¶Live Stock Show, exhibiting the pick of the Pacific Coast Farms. ¶Horse Show, including special Saddle Horse events. ¶Automobile Show, the largest exhibit of cars in the West. ¶Dairy Products Show, with butter making contests. ¶Poultry, Pigeon and Pet Stock Show, unexcelled anywhere. ¶Farm Implement Show with interesting demonstrations. ¶Wonderful displays of California's Resources and the products of the Farm, Factory and Home, and other Attractions too numerous to mention here, making in all a Big Week of Enjoyment for Everybody.

SPECIAL RATES ON ALL RAILROADS, TROLLEYS AND STEAMBOATS
For further particulars apply to
CALIFORNIA STATE AGRICULTURAL SOCIETY
A. L. SCOTT, President. SACRAMENTO C. W. PAINE, Secretary.

Irrigation and Forestry

THE RECLAMATION RECORD

Under authority of the act of congress of June 17, 1902, the reclamation service, one of the bureaus of the interior department, is charged with the survey, construction, and operation of irrigation works in the arid states. In connection with this work the service publishes monthly the Reclamation Record. During the early stages of the work the Record was restricted mainly to the formal report to the secretary on the progress of work on the various projects, with a summary of the principal contracts executed, specifications issued, and a few other matters of a like nature.

Secretary Lane a few months after taking charge of the interior department determined to make the Reclamation Record a medium of communication between the interior department and the water users. To accomplish this he directed that it should be made a more popular publication, embodying the best thought obtainable upon the problems of the irrigation farmer.

The reclamation commission, in hearty accord with this policy, adopted a resolution providing for the enlargement of the scope and purpose of the Record to include matter of more general interest to the water users and to subordinate the engineering features to the farming and irrigation activities. In addition it was decided to send the Record free of charge to all water users on reclamation projects who expressed a desire to have it.

About 7000 water users now receive the Reclamation Record regularly, and numerous requests from others to have their names placed on the mailing list are coming in.

Anyone in the remotest degree interested in a reclamation project should make arrangements with the Reclamation Service, Washington, D. C., to receive the Reclamation Record, the subscription price of which, to other than water users on the projects, is only 50 cents a year.

SACRAMENTO VALLEY CORN

Written for the California Cultivator
By Sacramento Valley Contributor.

Early in July a merchant in a Sacramento Valley town returned from an eastern trip, and in telling about it, remarked, "The country is beautiful, back there; everywhere you look, through Ohio, Indiana, Illinois and Iowa, there are beautiful corn-fields—corn 'knee high.' Too bad, we can't raise it here."

A friend, who was listening said: "Do you know that right now I can take you to a dozen places, within 15 miles of here, where corn is now 10 to 15 feet high?" And our merchant friend was very much surprised to learn it.

It is interesting to hear people all over the great interior valley of California say: "Well, we can grow some things pretty well, but this really isn't much of a corn country," when it is quite possible that within a few miles there may be as good corn growing as there is in America.

All that is necessary to increase many fold the corn crop in the San Joaquin and Sacramento Valleys is more corn growers. And it is pleasing to note that every year the acreage is increasing.

Around Hanford, in Kings county, there are some fields of corn, where the stalks average 12 to 15 feet high and big ears were forming by the middle of July. The same is true at Princeton in Colusa County, and around Butte City and Willows in Glenn County. It is a crop that does not need further demonstration to prove to any one interested that it can be grown and that it will pay, and the answer to the question: "Why isn't more corn grown?" is as near as we can arrive at it, either that we have too many other crops, or that we just haven't acquired the "corn growing habit."

There is no place where corn can be grown to better advantage than in California. We have the alfalfa in abundance to balance a stock ration, and corn will do more effective work in making meat here than in the East, where in winter a big per cent of the corn fed goes to keep the animal warm in order that another part of the corn or other feed may be effective in meat making.

And nowhere is the crop grown with less effort. In the Sacramento Valley it is planted anywhere from May to July, and it generally gets little, if any, cultivation or irrigation after planting. Not but that it would be a good thing to cultivate and irrigate, but it generally does well enough without it. All that is considered necessary is a good supply of moisture in the soil from winter rains, flood or irrigation, and plowing, harrowing and cultivation to conserve this moisture until the seed is planted.

A great deal of Egyptian corn is grown in all of the great valley. There is a big acreage this year in the Tulare Lake country and all along the Sacramento River. Much of this is threshed and sold for chicken feed, and some of it fed to hogs.

The acreage of Indian corn in California is sure to increase as we get more silos, and the acreage of both Indian and Egyptian corn must increase with the growth of the hog business.

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Profit in the Poultry Yard

THE FINE ART OF FEEDING

Written for the California Cultivator

By Jean A. Koethen.

Some one has said the proper feeding of laying hens requires, first, good hens; second, good feed; third, a good feeder. The good feeder is the man who understands his hens, who knows by an intuition which is almost a sixth sense, which are inclined to fat, which are eating too little, and who fits his feeding to the condition of his fowls and the time of the year.

In an experiment by Professor Dryden of the Oregon station, two pens of fowls consumed an average of 75.6 pounds of food, not counting green feed, and laid an average of 167 eggs per fowl. Two other pens, on just the same amount of food, with practically the same nutritive ratio, but with a different feeder, laid but 117 eggs each. Professor Dryden's skill in using the feeds at his command, in combining them in such a way as to give the variety which is the soul of feeding, and in making his hens work, made a difference of just 50 eggs per hen, and 50 eggs, at the average market price of 30 cents per dozen, would add $1.20 to the average income per hen.

If there is such a thing as a key to successful feeding it probably lies in these two words, "variety" and "exercise." That the ration should be balanced is, of course, understood, but there are at least a thousand different balanced rations, and every one may be unbalanced by the hen that eats it. What hen does not pick through her hopper of dry mash for the particular bit that pleases her, or turn her back on one kind of scratch grain in order to fill her crop, if possible, with another? The skilful feeder feeds a variety of grains—oats and corn in the morning, wheat at night, perhaps — feeds his mash moistened sometimes, with the addition of table scraps, cut-up greens or sour milk; gives beefscrap in winter and fishscrap in summer, or vice versa; buys green cut bone when he can afford it, and sometimes substitutes vegetables for alfalfa and mush for mash. Just how much it is worth while to vary from the regular menu of dry mash and scratch grain each feeder will determine according to circumstances.

If variety is important, exercise is the summum bonum, the ultimate aim and object of the careful feeder. If a hen can only be kept moving she will lay on almost any sort of ration, or on none at all, as a pullet of mine did this spring. Going broody, just as one of my large hens brought off a hatch so small that it was beneath her dignity to mother it, this pullet was given two chicks to mother. Pens and coops were all occupied, so I literally turned this brood "out to grass," giving them a box to sleep in, and occasionally, when I happened to think of it, throwing them a handful of chick feed. You would have thought that pullet (she was a tiny thing, too) could never have laid on such fare, but she was at it again in three weeks, and the two chicks, which she dragged round from morning till night in her search for food grew amazingly. When she left them, they continued to hustle for themselves, stealing from the turkeys whenever they could, and at a month old, were roosting in a tree. This does not prove anything, naturally, but it does suggest that exercise on good range will make up for a lot of deficiencies in the ration.

Without range it is difficult to secure exercise enough for the heavy breeds. Leghorns will keep hustling whether they need to or not, but Orpingtons and Rocks must be coaxed and encouraged to keep moving. Probably very deep scratching litter with the grain buried deep is the best substitute for range. The hens will scratch if they must, but only if they must. Many feeders keep the mash hoppers closed till noon, feeding in the morning nothing but hard grain in the litter. Others leave the mash accessible at all times, and give enongh grain at night to keep the fowls busy the next day. Others, again, throw a little grain into the litter in the morning and a little more at noon, that the fowl may always have something to work for. It doesn't matter how it is done, just so the hens are kept busy.

When scratching litter is scarce, it is a good plan to bury oats, which have been soaked over night, in the runs, but not too deep. After three or four days turn up the ground with a spade in one or two places and the hens will have a merry time digging and scratching for the succulent sprouts.

In feeding the heavy breeds, corn should be avoided except in very cold or rainy weather or for young stock, which can manage a good deal. Corn is the most fattening of feeds and makes the fat grow in layers, which is objectionable even in market fowls and a great detriment to laying. When the feeder handles his hens on the roost, as every feeder should, and finds them getting soft and baggy in the abdomen, he will, if he has the true poultryman's instinct for feeding, put those hens by themselves, and feed wheat and oats and green feed till they are "reduced." Leghorns may be allowed some corn, even in summer, though it is usually left out of the mash.

While we are feeding to avoid too much fat, we must be sure to have enough, for a hen must have some surplus fat before she can lay. At the Cornell experiment station a large number of Barred Rock hens were killed and cut open in order to determine the amount of fat necessary to good laying condition, and it was found that the fattest hens contained eggs ready to lay, while the egg organs of the leanest hens were entirely dormant. The explanation is that the eggs are developed in the ovary in the form of little ovules. These ovules form in follicles, and when ripe they burst and let the yolk or ovule fall into the oviduct and then pass down the oviduct where the white of the egg is formed about the yolk. A chemical analysis of these eggs shows that 64 per cent of the dry matter of the yolk of the egg is fat and that it is the only fat in the egg, except a small fraction, the white of the egg being practically pure albumen, the shell being mineral matter. It is absolutely necessary, therefore, for a hen to have some surplus fat in her body before she can start an egg, but the fact that she has this fat, or even that she has the yolks ready to be deposited, does not insure the development of the egg. Lack of food or water, rough usage or a sudden cold snap or rain may cause the material in the yolk to be reabsorbed into the hen's body for its own maintenance. Feed well then, at all times, but not a fattening ration, and if some hens put on too much fat, either compel them to "reduce," or send them to the butcher. A hen must be a good eater in order to be a good layer. If she turns the raw materials into fat instead of into eggs, off with her head.

This matter was gone into very carefully at Cornell and results charted, showing that "as hens increase in their consumption of food there is an increase of weight of body and an increase in the percentage of eggs produced." Professor Rice's conclusion is: "We must feed hens all they will eat and eat up clean of the right kind of food, because hens begin to increase in their food consumption several weeks before they begin to lay, as shown by this chart. They also increase in weight before they begin to lay. A condition of egg production is in a measure a condition of reproduction and carries with it a tendency for the animals to become fat. The history of any domestic animal bears out this statement."

In feeding any breed there must be discrimination as to age, season of the year, cost of feed.

The older a hen is, the more likely is she to put on fat, especially if she is a Rock or an Orpington, and the more must fattening feeds be guarded against. Young stock need some corn, particularly the cornmeal in the mash, and cracked corn is very good for them in combination with wheat or barley.

Summer feeding is differentiated from that of winter in this climate mainly by leaving out corn and cornmeal. In the east it is buckwheat that is omitted. At the Cornell station the mash, which consists of 60 pounds cornmeal, 60 pounds middlings, 30 pounds bran, 10 pounds alfalfa meal, 10 pounds oilmeal, 50 pounds beefscrap and one pound salt, is used without change summer and winter, the only difference being in the hard grain ration which in winter contains buckwheat. Here in Southern California the association mash is mainly used. It consists of (per ton): 600 pounds bran, 300 pounds shorts, 100 pounds feed meal, 200 pounds kaffir meal, 150 pounds beefscrap, 150 pounds fishscrap or whale meat, 70 pounds fine ground bone, 100 pounds alfalfa meal, 400 pounds ground barley, 10 pounds salt. In summer the feed meal is omitted.

There has been a good deal of discussion the last few years in regard to feeding during the molt, but the most common practice at present seems to be to feed well, but without much change from the ration of the rest of the year. At Cornell 120 hens which were well fed during the molt, but without any special "dope," each produced 25 cents' worth more of eggs in a year than the same number of hens which had been starved for two or three weeks according to the Van Dresser method. These hens were Leghorns, as are those of a Riverside breeder with whom I talked last week. This gentleman, Mr. W. G. Suits of the Bandini Poultry Ranch, says he makes no difference at molting time, except to give a moist mash in the morning in addition to the dry mash which is before the hens all the time. This mash is moistened with sour milk and contains the green feed as well. With heavy breeds it is probably best to reduce the feed somewhat at the beginning of summer, for these hens are likely to be overfat after the heavy feeding of winter, and an overfat hen cannot molt easily. When the hens are rid of their superfluous fat and have dropped most of their feathers, a little linseed meal is added to the mash and sunflower seed to the grain ration. Both these feeds contain a good deal of protein, and protein is as necessary for growing feathers as it is for making eggs.

Cost is always an important element in determining the ration. "Feed what you have or what you can get most cheaply" is a good rule. This applies particularly to barley, which is cheaper than any other feed just now in California. Barley has not always been considered a good feed for chickens. A bulletin of the Oregon station as recently as 1909 spoke of it disparagingly as "not extensively fed to poultry, but it is coming to its own and when properly prepared is as palatable as any feed. Neither whole nor rolled barley, dry, appeals to fowls, but steamed or soaked, it is very wholesome and they are fond of it. It is a good

(Continued on Page 143.)

The Summer Season

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Questions and Answers

THE EDITOR AND STAFF

Questions to be answered in this department should be received at this office one week before reply is expected. Write plainly on one side of the paper and sign full name and address. Unsigned communications receive no attention.

Possibly Red Spider.

My umbrella trees are losing their leaves. They are covered with web, but I cannot find any insect. The lawn grass under them is also dying. What is the trouble? Can I use a spray to control it?—Subscriber, Porterville.

Possibly this is a case of red spider or red mite. After the work of this pest becomes so pronounced the pest has usually passed on. It may be controlled by spraying with sulphur lime solution 1-33 or, if dry sulphur is preferred, the scattering in the tree of liberal amounts will secure at least a degree of immunity.

Homestead Lands.

Where can I get information regarding homestead lands in California?—

Of course, the land office in the district in which you wish to secure lands should be able to inform you as to location of lands in that district. We believe, however, that the land offices usually permit examination of books showing filings made, but do not make any report to prospective settlers. There are government land locators, but we do not know as to the integrity of these. Cases have been known where locators have placed people on rocky hillsides of no value whatever. The California Development Board has issued "Government Lands Newly Opened in California." Write the board, Ferry Building, San Francisco, for this list. U. S. land offices in California are located at San Francisco, Los Angeles, Susanville, Visalia, Eureka, Sacramento and Independence.

Diarrhoea.

What is the cause of diarrhoea with little chicks? Put out ten a week ago and lost all but one with it. Have been informed that water causes it.—Subscriber, Dixon.

Chilling, feeding too soon, and feeding sloppy or indigestible foods are the most common causes of diarrhoea in young chicks. Bacillary white diarrhoea comes from a germ on the egg laid by an infected hen, but this disease is rare in California, and it is much more likely that your chicks were chilled or improperly fed. Young chicks should be protected from wind and dampness the first four or five days, even when they are hovered by a hen. If they are kept warm and fed simple dry feed, such as rolled or steel cut oats, commercial chick feed and bran, or hard boiled eggs chopped, shell and all, with stale bread, there should be no trouble. Give them all the clean, fresh water they want.—J. A. K.

Poisoned Chickens

My chickens are afflicted with a peculiar disease. They appear to be in good health till a sort of paralysis attacks them, commencing in their legs and gradually spreading to their bodies. They go around in a sitting posture for a day or two and then fall on their sides, from which position they are unable to rise. In several hours they are dead. Can you give cause and remedy for this trouble?—Elmo Subscriber.

There must be other symptoms, diarrhoea, perhaps, or dark comb. It looks to me as if these chickens had gotten hold of some kind of poison, such as copper or arsenic from a spraying mixture or lead or zinc from paint skins carelessly thrown out, but overfeeding with too rich food sometimes produces similar symptoms. See that their diet is right—plenty of green feed, no corn, and that they scratch for all their grain. And look for poison. Give the sick fowls a teaspoon of castor oil or 20 grains of Epsom salts as soon as they are taken, and separate them from the others. This is all that can be done until you find where the trouble is.—J. A. K.

Moth-Catching Plant

Some time since I saw cuts and description in your valued paper of an insect destroying plant said to be the only one in the state. I have several vines that are identical except the leaf, which is shorter and lacks the vining. In other respects they appear the same—seem to be honey plants and are very sweet scented. Last evening I observed the moths on them and this morning I went out, to find them caught as in the specimen I send you. Will you kindly tell me the name of the plant and moth?—Subscriber, Hanford.

This plant is one of the milkweed family and bees frequently get so covered with the pollen masses as to be unable to get away. I have never observed such a large species of moth as this (Humming bird moth) captured in this manner by the plant. The plant I do not recognize from the fragment sent. Does this happen often?—A. D.

Alfalfa Refused to Bloom

The third cutting of alfalfa in this portion of Fresno County refused to bloom, the buds turning white. Around the edge of some fields and on the levees a very small portion of the plants bloomed. The crop was from one-third to one-fourth short. Some think it was caused by hot winds, others that it is the Utah weevil. I am inclined to think it the latter.—Subscriber, Kerman.

This query was referred to Mr. J. M. Bomberger of Modesto, who writes:

"It is probable that the 'alfalfa bacteria' on the roots have been killed either by too heavy irrigation or too close subirrigation, or there may be too high a percentage of salts in the soil; also that condition some time exists where the soil is quite sandy and has been leached by heavy irrigation. The alfalfa being all right on the levees would indicate the latter cause."

Sharpening Lawn Mower

On page 104 of last week's Cultivator we gave an article regarding sharpening lawn mowers, and have the following comment by Dr. R. R. Snowden of Los Angeles, one of the most practical observers of practical things connected with rural life.

"The article in the July 30 issue on 'Sharpening Lawn Mowers' will doubtless cause much work on lawn mowers with a chance of doing harm. Every lawn mower I have ever used had an adjustable bar that the blades slide over, cutting the grass between bar and blade. By setting this bar at the proper angle and contact with the blades both the bar and blades keep sharp without any filing or other work."

Rosebuds Failing to Open

When roses form buds and they fail to open, drying up before expanding, my experience is that applications of gypsum will cure the trouble and cause the roses to bloom normally. After two seasons of failure the analysis of the soil indicated the proper treatment, which, being followed, brought desired results.—R. R. Snowden.

Tomatoes Dropping

Commenting further upon a query which we answered in last week's Cultivator, Dr. R. R. Snowden writes:

When tomato blooms drop and the plant refuses to fruit it simply needs a reminder that it has grown enough and that something else is expected of it. This is successfully done by pinching off the terminal buds of all or most of the branches. My tomatoes that produced luxuriant vines and many blooms, but no fruit, responded promptly to this treatment both last season and this. So far as I know it does not fail.

Veterinary

Answers in this column by Dr. Wm. Petrie, 2714 South Harvard Blvd., Los Angeles, are without charge. For immediate mail answer remit $1.00. In writing questions give full symptoms or particulars of injury of animal.

Lymphangitis

About five months ago I worked a large four-year-old mare to a load for a mile or two over boulders in a creek bed. Next morning her hind leg was swollen between fetlock joint and hock and there was slight lameness. Thinking it not serious I hitched her up again and in a short distance she seemed relieved and worked the same as the day before. Next morning the symptoms were worse. Gave her complete rest for several days with no change. Put her to work again on soft ground with the same results, lameness and swelling each morning relieved by work. Could detect no heat, but on pressure the parts would stay indented for some time. Had her shod and in a few days she improved so I thought she was cured. Two or three weeks ago the trouble seemed to return and now she is worse than ever and swelling extends to the body. Seems healthy other ways. What is the trouble? — Reader, Monterey County.

The mare has lymphangitis, a disease that is caused by overfeeding Overfeeding causes the blood to become thick so it flows very sluggishly through the blood vessels. You probably know that the blood is carried to the different parts of the body through the arteries and returns through the veins. A third set of vessels called the lymphatics gather up the refuse, and after passing it through several glands return the material they are carrying to the veins. Several of those lymph glands are located in the inside of the hind leg, and when the blood is too rich those glands are taxed to their utmost. Any little scratch below the hock is liable to irritate the parts and cause the glands higher up to become inflamed. This clogs the lymphatics in that limb and causes the parts to swell. Often both limbs are affected. I hope this will make clear to you what is wrong with the mare.

To relieve her reduce her feed and give a physic, as follows: Aloin, one ounce; turpentine, six ounces, and raw linseed oil, enough to make two quarts. Mix. Shake well and divide into four doses. Give the doses four or five days or a week apart. After giving a dose if the mare is physicked noticeably, then do not give the next dose for a week. Also give her the following powders: Nitrate of potash, eight ounces; bicarbonate of soda, two ounces, and powdered gentian, two ounces. Mix and make into 12 powders and give one every day. For external treatment rub the swollen parts well with the hand morning and evening and apply the following lotion once a day: Chloride of zinc, one and one-half ounces, and water, one gallon. The lotion will do more good if you warm the amount you use just before applying it. Do not pour it into a metal dish. Warm it in an earthen or granite dish.

Abscess

Our milch cow has repeatedly had a lump on the left side of jawbone. We have opened it and found it full of pus. It gathers again immediately and she seems to be in great distress until it is lanced. Thought it was due to oat or barley beards, but find no trace of that. We feed oat hay, alfalfa meal and barley. Will it affect the milk?—Subscriber, Santa Cruz.

Can only suggest that the next time it is lanced a large opening be made. Wash it out and fill the cavity with air-slaked lime. Dust some of the lime into the cavity once a day until it is healed. The milk will not be affected unless it is due to tuberculosis. Would advise having her tested for tuberculosis.

Mare Thin

Have a mare 17 years old with a colt four months old. Feed her rolled barley and oat hay. She eats well, but is very thin. Will have very little work for her until plowing. Please tell me how to feed. What and how much for each feed? Would steamed barley be more nourishing and would stock molasses be beneficial?—Subscriber, Lincoln.

The mare may be a good milker and that would keep her thin while suckling a colt in spite of plenty of feed, good care or medicine. You say the colt is four months old. That is the proper time to wean it. With very few exceptions the mare and colt will both do better if the colt is weaned at four months old. At the age your mare is, would advise having the teeth fixed. Then do not overfeed. As to the amount of feed: One pound of hay to each 100 pounds of horse every 24 hours is enough, and when working hard the same amount of grain is about right, but when not working reduce the grain rations about one-half. That is a good general rule to go by. Give very little of the feed in the morning, not a large feed at noon, and most at night Be sure to allow plenty of drinking water. Steaming the barley once a day would make it easier to digest and help to regulate the bowels. Stock molasses is all right when fed sparingly. A teaspoon of baking soda once a day in the feed will also aid digestion.

Swelling on Chest

Have a 12-year-old mare that has swelling on her chest caused by reaching over manger. Have been bathing it and applying liniment, but it does no good.—Subscriber, Lincoln.

For the enlargement on the chest of the mare there is only one remedy. Spit it wide open, up and down, then dress it once a day with a good antiseptic solution. Permanganate of potash, one dram to a quart of water is good.

MONEY MAKING LITTLE LINERS

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TREES.

For Sale—One and two-year-old Washington Navels and Valencia Orange Trees. Eureka Lemons and Marsh seedless grapefruit, for Spring 1914 delivery. Write for prices, or call and examine stock at Morris Citrus Nurseries, Cor. Juanita and Valley Center, R. F. D., Box 34, San Dimas, Cal.

Now Is the Time to book your order for fig trees. "My specialty." 25,000. Seventeen varieties, extra fine, well rooted, straight and branched, one and two year old trees. Price list on application. C. C. Terbush, R. 2, Box 543, San Gabriel, Cal.

For Sale—50,000 Sour Orange seed bed stock, finest quality, or will let to responsible party on percentage basis; also 2000 A1 late Valencias, two years old next spring, or might exchange for Washington navels. H. H. Eshelman, Soldiers' Home, Cal.

For Sale—A block of 3000 Valencias, 1000 navel and 1500 lemon trees, grown between orchard rows and must be moved at once. Prices right for quick deal. Also have budded and seedling Avocados. Smith-Roberts Nurseries, Tustin, Cal.

The 1200-Acre Nursery, growers of 1500 varieties of trees and plants. OREGON NURSERY CO. Orenco, Oregon. Sales office, 522 Chamber Commerce, Los Angeles, Cal.

1000 Avocado Seedlings—Pots, also can furnish nice plants, bare root, at low price. A. A. Quint, R. D. No. 2, Pasadena, Cal.

For Sale—Eureka Walnut Trees, budded on Native Black Walnuts. Choice stock. Order immediately. Don't delay. Wm. Holve, Fullerton, Cal.

Citrus Nurseries, Murphy Oil Company, East Whittier, California. Selected stock for sale; inspection invited.

You Future Nurserymen—Write for prices on special stocks of plants to start business with. Ballou's Nursery, Pasadena, Cal.

Budded Citrus Trees and seedlings at fair prices. Will take auto or land. J. P. Butler, Jr., P. O. Box 145, Lamanda Park, Cal.

SEEDS AND PLANTS

Burbank Spineless Cactus—Robusta, Special and Columbia for forage; Eldorado, Banana, Royal, Sugar, Niagara, Green Fruit, Red Fruit and Opaline for fruit. Write for description and prices. J. T. Green, Box 63, Morgan Hill, Cal.

For Sale—Avocado Seeds (Alligator Pear) at $4.00 a 100; $35.00 a 1000. I also have to offer a few small yearling Avocado trees at $10.00 a 100. J. B. Wagner, Nurseryman, Pasadena, Cal.

$ $ $ $pinele$$ Cactu$—All varieties Burbank's fruiting and forage plants, 10c up. Plant now. Booklet free. Wonderful new Giant Rhubarb. Black Bros.' Nursery, 455 Lucas, Los Angeles. $ $ $ $ $ $ $ $ $

Alligator Pear Plants—Choice Avocado seedlings from Mexican highlands, two to three feet high. J. C. Bosche, 127 South Benton Way, Los Angeles, Cal., Phone 51208.

Thornless Cactus Slabs for sale at 5 to 15 cents each. Chas. R. Hanna, R. D. No. 3, Riverside, Cal.

WANTED.

Wanted—Married man with three small children would like position on ranch. Good milker and teamster. Can do any kind of general ranch work. Can run any kind of pumping plant and can do nearly all kinds of repair work. Would like steady position. Do not drink or use tobacco. D. L. A., care Ostrow, R. F. D. 2, San Diego, Cal.

Wanted—Man with agricultural training and several years' practical experience with dairy and stock cattle, desires responsible position on large ranch. Can furnish best of references as to character and ability. Address Henry Wade, 227 Cottage Grove avenue, Santa Barbara, Cal.

Farms Wanted—We have direct buyers. Don't pay commissions. Write describing property, naming lowest price. We help buyers locate desirable property Free. American Investment Association, 12 Palace Bldg., Minneapolis, Minn.

Wanted—Steady position by expert in pruning and new style budding and grafting; any kind of trees or roses. Work guaranteed. Mike Detore, 138 South Los Angeles St., Los Angeles, Cal.

Wanted—Active young woman to buy interest in poultry plant at Long Beach, and assist in management. Address Cultivator Box 99.

Wanted—To hear from owner of good farm for sale. Send description and cash price D. F. Bush, Minneapolis, Minn.

HORTICULTURAL PRINTING

Catalogues for the seed and nursery trade. The live stock and poultry industries are a specialty with us. Two thousand illustrations to select from. Write for prices and samples. The Kruckeberg Press, 237 Franklin St., Los Angeles.

FARM LANDS FOR SALE.

For Sale—640 acres of land 40 miles from Los Angeles; Southern Pacific R. R crosses a portion of the land, 150 acres under fence, 80 acres in crop this year, 10 acres in alfalfa, can cut from five to seven crops of alfalfa per year and will average better than one ton to the acre for each cutting; have had plenty of water on the surface up to the present time, and I have a good pumping plant that will furnish plenty of water at all times; have three good wells, house, barn and other out buildings. I will sell all or a part $25 per acre and up; one-half cash, balance 8 per cent for any reasonable time. Address J. E. Youngblood, Lang, Cal.

VICTORIA, AUSTRALIA, WANTS SETTLERS

Special inducements; government land, railways; free schools; cheap irrigation; 31 years to pay for farms adapted to alfalfa corn, grains, fruit, etc.; climate like California, ample markets, reduced passages, special excursion next November. Free particulars from F. T. A. FRICKE, Government Representative from Victoria, 687 Market St., San Francisco, Cal., Box X.

For Sale—Better Than Lease—160 to 1600 acres of fine sub-irrigated river bottom land suitable for beets, beans, rice, grain and vegetables. Near large city. Good markets and cheap transportation. Will sell for $200.00 per acre, 5 per cent cash and 5 per cent each year until principal is fully paid. C. H. Barrow, 111 So. Broadway, Los Angeles, Cal.

Florida Land—Three Months Free—Subscription to the Indian River Farmer. For truckers, fruit growers, citrus, general farmers and folks who want to know about Florida. Address INDIAN RIVER FARMER, Department X, Vero, Florida.

For Sale—Best paying alfalfa ranch in the beautiful Santa Clara Valley, one-half mile from R. R. station 18 acres alfalfa, 2 acres family orchard; beautiful residence, outhouses and irrigating plant. Address W. Kiely, Lawrence, Cal.

For Sale—Ten acres, fruit ranch, trees two and four years old; seven acres of apples and three acres peaches, cherries, pears, plums. Price $6,000, half cash, balance on time at 6 per cent. F. W. Duncombe, R. F. D. 1, Beaumont, Cal.

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Ranches, homes, acres, lots, exchange; send for free list. Wilson Bros., Santa Cruz.

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For Sale or Exchange—Wanted, 100 pullets, Plymouth Rocks, R. I. Reds or Orpingtons, to feed my Burbank Spineless cactus to. You want the cactus, I want the chicks. 50c slabs for 50c pullets. Address or ship to H. L. Bauers Cactus Ranch, 4401 Hummell St., Los Angeles, Cal.

Poultry Wanted—We pay the highest market price for all the local poultry we can get, no matter how large the quantity; also fresh ranch eggs. We remit immediately. National Poultry Co., successors to Allaway & Layton Co., 607 E. Third St., Los Angeles, Cal.

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Barred Rock and R. I. Red baby chicks. If you want to raise some broilers send us your order. Price $10.50 per 100 until September 15th. J. W. Lyon, Gardena, Cal.

Barred Plymouth Rocks — "None better." Special prices for May and June. Write for 'em. C. H. Vodden, Los Gatos, Cal.

Trap-Nested White Leghorns—Bargains in Cockerels from heavy layers. Only $1. A. R. Schroeder, Box C, San Gregorio, Cal.

MISCELLANEOUS.

Free for Six Months—My special offer to introduce my magazine "INVESTING FOR PROFIT." It is worth $10 a copy to anyone who has been getting poorer while the rich, richer. It demonstrates the REAL earning power of money, and shows how anyone, no matter how poor, CAN acquire riches. INVESTING FOR PROFIT is the only progressive financial journal published. It shows how $100 grows to $2200. Write NOW and I'll send it six months free. H. L. Barber, 430, 28 W. Jackson Blvd., Chicago.

A SOLAR FOOD CONSERVER

This inexpensive appliance intensifies the heat of the sun and uses it to sterilize and preserve fresh in every way, and to cure all kinds of deciduous fruits and vegetables. This invention opens a new home industry for making crystallized fruit confection for sale. Purchasers report having sold as high as $75.00 per month in this way. Write for prices and particulars to E. E. Dow & Co., Redlands, Cal.

Bargains for Dairymen—We have a number of used Cream Separators as good as new that we are offering at bargain prices. We also carry the famous Primus Separator. Chilly King Cooler and a full line of up-to-date dairy supplies and machinery. Write us for money saving particulars. Sanitary Dairy Supply Co., 246 S. Central Ave., Los Angeles.

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Perfectly equipped
propagating plant,
fine opening for an
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Box 63, Rialto, Cal.

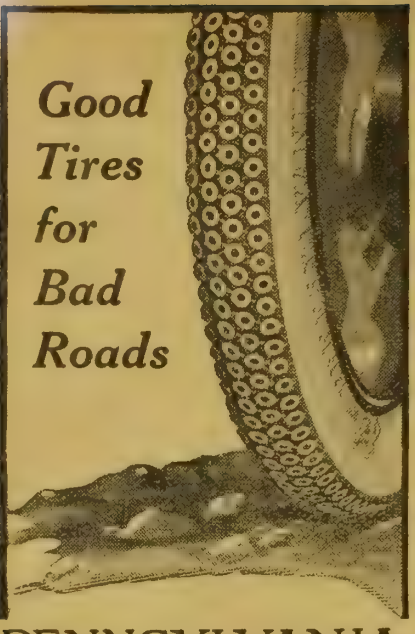
"Smith's Pay the Freight"—To reduce the high cost of living, send for our Wholesale to Consumer Catalogue. Smith's Cash Store, 112 Clay St., San Francisco.

RABBITS

New Zealand Reds, prize stock, young for sale; buy now and raise for the winter shows. Mrs. C. A. Richey, R. F. D. 8, Box 557, Los Angeles.

BEES

It pays to keep bees on the farm, raise your own honey, make considerable profit besides. We can supply gentle Italian bees at 3.50 for five frame colony, five dollars for ten frames, and ship anywhere by express. Write for our free price list of bees, instruction books, etc. Spencer Apiaries Co., Box 14, Nordhoff, Cal.



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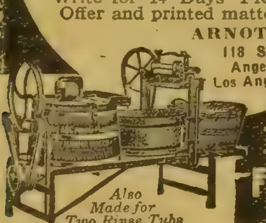

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There are three things that destroy your lawns. Dandelions, Buck Plantain and Crab Grass. In one season the Clipper will drive them all out
Clipper Lawn Mower Co.,
Dixon, Illinois

Household Department

HELLO!

Dont' forget to say "hello!"
When you meet some one you know,
Maybe he's discouraged, sad;
Make him feel the world's not bad
With your cheery, warm "hello!"

We are children, don't you know?
Need the hearts that say "hello!"
Need the faces that are bright,
Need the souls that shed the light,
Need the friends that say "hello!"

When a man can say "hello!"
With his countenance aglow,
So that you can see his heart,
You may steal and use the art,
Imitate his rich "hello!"

—Eugene Secor.

NEIGHBORS

By Ida Alexander in Youth's Companion.

The holdings in the little village were not large. Some had one acre, some two, some three. Few had more. But Silas Green boasted no less than eight acres. Moreover, it was the most fertile and best-kept ranch for miles round. Strangers seldom passed it without remarking on its thrifty appearance. The lawn was always neatly trimmed; the orchard was well cultivated; the fruit trees were whitewashed at just the right time; the house shone without and within. Silas himself was inordinately proud of it. He never drove away without a backward glance; he never drove in without a satisfied smile.

And yet the very excellence with which the place was kept had brought him trouble enough. He could not endure to see other places kept differently. He had quarreled with all his nearest neighbors about the way to do this or to do that. Mrs. Green had remonstrated at first.

"What's the difference, Silas," she would say, persuasively, "about how things are done? 'Tain't as important as good, neighborly feelings."

"I don't like to see slipshod ways, that's all," the old man would remark, and he would shut his lips together.

"But it don't harm you any."

"It does! It does, Henrietta! There's Johnson; his tomatoes are a flat failure year after year. I told him he ought to change his fertilizer, and do away with that black rot they catch. But he wouldn't listen, no, siree! Every year it's the same thing."

"Well, his wife brought me over a bottle of ketchup last year, crop or no crop," said Mrs. Green.

"I reckon you sent her something first, Henrietta," Silas observed, shrewdly. Mrs. Green looked down. "And, besides that, the ketchup wa'n't any good," he added.

"No, but it stood for good and friendly feelings. She hasn't got 'em now. I met her at the postoffice the other day, and she scarcely spoke. I felt just terrible."

"Well, I wouldn't. If folks that need advice are too touchy to take it, and get mad, why, let 'em. I calculate we can about row this little boat of ourn."

So, indeed, it appeared. With such steady, experienced hands to do the rowing, there was small danger of shipwreck.

But as time went on, and the old man's blunt tongue and his habit of giving unwelcome advice estranged neighbor after neighbor, Henrietta Green felt the loneliness of having no neighbors. No one ran in to borrow this or that; no one came over with the first fruits of the preserving kettle; no one came to give or take, after the pleasant country fashion. As far as human intercourse was concerned, she might as well have lived alone on a desert island.

With Silas it was not so bad. Twice a week he made trips over the mountains, to dispose of his vegetables and fruit; every other day he drove to town for the mail; there were many things to break the monotony for him. Sometimes he proposed taking her with him.

"Get into your things and come along," he would urge her. "The ride'll do you good. We can get supper in town, so that you won't have anything to do when you come back."

But his wife never accepted the invitation.

"Some other time," she would answer, "not today."

She could never bring herself to explain to Silas that the cold greetings and averted eyes of her neighbors filled her with a gloom that the exhilarating trip over the mountains could not charm away.

Sometimes she cried from the loneliness of it. At first she had tried to keep her own relations with the neighbors friendly, in spite of the difficulties that her husband's sharp tongue made. But it was of no use. He affronted the men, and the women took up the quarrel. Little by little she was left out of everything.

At last she gave it up and confined herself to her household tasks, but they did not give her capable hands enough to do. Her leisure time she spent idly, sitting with folded hands and looking out over the hills.

By spring she had failed perceptibly. Silas watched her with fear at his heart. He called in the doctor, who laughed at his fears before her, and spoke seriously to him when they were alone.

"She needs waking up, Silas," he said. "The human family is a gregarious one. Give her some good times; get in the neighbors; don't let her be so much alone. 'No man liveth to himself.' Remember that. Now you just give her some rousing good times—or—else—I'm afraid—"

He paused and held out his hand. Silas took it with one that trembled.

"I'll do it, doctor," he said.

And then his face lighted up.

"I have it! I'll give a party!"

"Just the thing," said the doctor.

"But—no one would come," concluded Silas, hopelessly. "I'll do something, though," he went on. "I'll do somethin', or—die—too."

In the days that followed, he did his best. He tried in his clumsy way to persuade her to go driving; he brought her everything he could think of from the store in town. And she thanked him with a smile that moved him more than tears would have done. Silas clenched his hands when he was alone.

"I'll do somethin'." he repeated over and over. "Next week I'll do somethin'."

But he had not reckoned on the frailty of his own body. He came home one day, swaying dizzily. His wife made him lie down, and then changed horses and went after the doctor. When the doctor came, and pronounced the case typhoid fever, the fear on the face of Silas was not for himself.

"What'll she do now?" he whispered to the doctor. "I was going to take her for a trip next week. What'll she do? Will it kill her?"

The doctor shook his head.

"It will probably do her good," he said.

All that day, all that night, all the next day, Henrietta Green went swiftly about the old work and the new. She was worn and tired, as much from anxiety as from the actual work. At last Silas sank into an uneasy sleep, and she sat, half-dozing, by the kitchen fire. A tap at the door startled her.

"Come in." she said.

Mary Johnson entered, and with outstreched hands came swiftly across the floor.

"We've jest heard," she said. "I came right over. Don't you worry a mite. I have a brother who had typhoid once. He was terrible sick, but he pulled through, and he's a well man to-day. Don't you be afraid, Henrietta, and don't cry like that. You must keep up. Johnson's outside. He wants to know where the milk-pail is. And he'll feed and bed down the stock. We'll manage fine. Don't you worry."

Day by day, night by night, the old kitchen door opened to the old neighbors, who rallied round the striken house.

(Continued next week.)

J. McDermott & Sons
WHOLESALE LINEN DEALERS

111-13-15 Winston Street
Los Angeles, Cal.

Have established a mail order department, and will sell by mail at WHOLESALE PRICES.

THIS SPECIAL PACKAGE
$30 Value Sent on Receipt of $20

Look at This List:

	Usual Value
1 Pair Blankets	$6.00
1 Comfort	3.00
1 Bed Spread	2.50
1 Doz. Towels	1.80
½ Doz Bath Towels	1.50
2 Yds. Table Cloth	3.00
1 Doz. Napkins	3.00
1 Doz. Twill Dish Towels	1.00
1 Rag Rug, 27x54	1.50
2 18x54 Dresser Scarfs	1.00
6 Sheets	4.50
6 Pillow Cases	1.20
TOTAL RETAIL VALUE	$30.00

We pay all freight or express charges. We guarantee every article to be as represented, and usually sold at above prices. You SAVE 1/3. If you don't want whole list select what you wish, and deduct 25 per cent. Express charges paid on all orders of $5 or over. If you are not satisfied this is the best bargain you ever bought, return the goods and your money will be refunded. Reference: German-American Trust & Savings Bank, R. G. Dunn & Co., Bradstreets.

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Of course you are going to have a new fall suit —but why pay $20 to $30 for merely ordinary ready made garments when you can get a classy
Made-to-measure, all-wool BLUE SERGE SUIT for $15
the greatest value ever offered in a high-grade blue serge suit, tailored to your individual measure for only $15.

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Send today for our big book with 70 liberal samples plain and fancy woolens, new fall styles all FREE. Through our special tailoring system and by selling direct—through no agents, stores or dealers—we are able to give values that absolutely cannot be duplicated.
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For Sale

A lot of light galvanized sheet iron pipe, 4, 5, 6 inches, in 10-ft. lengths, suitable for irrigation purposes. Prices right.

201 Main St. San Francisco

IDEAS FOR THE COOK

Written for the California Cultivator
By Isabel Cottle.

Breakfast

Halves of Ripe Peaches, Soft Sugar
Broiled Bacon, Fried Apples
Southern Spoon Bread Coffee

Lunch or Supper

Creamed Potatoes Scalloped Salmon
Cottage Cheese Rolls
Apple Dumplings
Coffee

Dinner

Broiled Chicken
Baked Sweet Potatoes
Corn Oysters Lima Beans
Watercress Salad
Apricot Tarts Coffee

Southern Spoon Bread

Three tablespoons melted shortening, two cups cornmeal, one quart milk, one teaspoon salt, three eggs. Heat milk to boiling point, then stir in meal and salt, add shortening and cook five minutes. Cool mixture, add yolks of eggs well beaten, then beat whites of eggs to stiff froth and fold in. Pour batter into greased two-quart pan and bake in moderate oven 45 minutes. Serve hot, using a spoon with which to serve it.

Watercress Salad.

Look over the cress thoroughly, removing coarse stems, wash and place in a cool place until wanted. Make a dressing of hard-boiled yolks of two eggs, mashed smooth, to which add a pinch of salt, one of mustard and a little white pepper. Mix to a smooth paste with vinegar, then add either sour or sweet cream to make the quantity of dressing desired. Add more vinegar if desired. Chop the whites of eggs, add to the dressing and pour over the cress when ready to serve.

Apricot Tarts.

Take an egg, with its weight in crushed macaroon crumbs and fresh butter, a tablespoonful of sugar, a small piece of citron and a little flavoring. Beat up the butter to a cream with the sugar, add the crumbs and eggs, then the flavoring, mixing all well together. Line some patty pans with puff paste, put a small piece of stewed apricot in the center of each and then a thick layer of the mixture. Lay a piece of citron across each patty pan and scatter chopped almonds on either side. Bake for about a quarter of an hour in a quick oven.

Rice and Pimentos

One small can of pimentos, one cup of rice, one cup grated cheese, two eggs, one and one-half cups of milk, salt and pepper to taste. Wash the rice and boil it in plenty of boiling salted water, then drain; add the cheese, the pimentos, first having cut them in small pieces, the eggs which have been well beaten, the milk and the seasonings. Turn into a buttered fireproof dish and bake in a moderate oven for 20 minutes.

MAKING TIME COUNT.

One housekeeper writes that in her younger days she was always considered slow. She says: "When I began a task it took me so long to get through that I frequently became disgusted, and finally determined to try and overcome this natural inactiveness. I began with dishwashing, the most disagreeable task of all. I decided that 20 minutes would be enough time for ordinary dishwashing like mine. But try as I would it always took a good half hour. In a few days, however, persistence won and 20 minutes was sufficient.

"Then I began on sweeping, dusting and so on, taking up the different tasks one by one and allowing myself only sufficient time to do them well without unduly tiring myself. Housewives know that washing and ironing are the hardest tasks in the line of housework. I found that by having all the other work arranged and the minor work out of the way before starting I could accomplish more in a shorter length of time.

"I also learned to keep my mind on my work and not build air castles. In this way I overcame my slowness, and now even the dishwashing has no terrors for me. There are many others who can profit by my example, not only in their work but in changing clothes, reading, writing, etc. There is no necessity of being slow."

NOT FOR DONALD

Sandy and Donald were discussing the domestic infelicities of a mutual friend.

"Ay, ay," said Sandy. "Jamies Thompson has a sair time wi' that wife o' his. They say they're quarreling."

"What else can ye expect?" was Donald's scornful retort. "The puir feckless creature marit after courtin' for only seven years. Man, he had no chance to ken the woman in sich a short time. When I was coortin', I coorted for 20 years!"

This little dialogue took place on a railway journey, and in the further corner of the compartment sat an Englishman, listening and much amused.

"And may I ask," he inquired, "if connubial bliss followed this long courtship?"

Donald looked at him reproachfully.

"I tell ye I coorted for 20 year," he said, "and in that time I kent what woman was, and so I didna marry."

GOOD REASONING

Little Willie's mother had made him a fine new pair of knickers, but the little boy complained that they were uncomfortably tight. "They're tighter than my skin, mummie!" he declared. "Don't be silly, dear," remonstrated his mother. "They can't possibly be tighter than your skin." "But they are, mummie; because I can sit down in my skin, but I can't sit down in these trousers!"

A SOUTHERN "BLACK HAND"....

The Florida Times-Union gives the following:

Mrs. Collins found the following Black Hand letter pinned to the door one morning:

"Deer Mis Collins—Onless you put a jar of jam, a hunk of chokolit cake, a apple pie an' a bag of candy down by the old well, we will steel you little boy and keep him, onless you pay up a millyon dollars."

SAME HERE

Little Jack Stout was visiting a ranch and was out at the barn one morning watching his uncle feed the horses hay. It troubled him to see them given only dry hay and oats. Finally he said in a tone of sympathy: "Never mind, old horsies, we have to eat breakfast food ourselves."

"RIGHT-O, RASTUS"

One morning, when the senator was wandering over the farm, he came upon his man feeding the chickens. Rastus stopped him with:

"Good mawnin', suh! I been thinkin' this mawnin', and I made up my mind, suh, as I's lookin' at these heah chickens, that they's the usefullest animal they is. You c'n eat 'em 'fo' they's bo'n, and aftah they's daid!"

Meals on Time

A good oil stove gives full heat just as soon as it's lighted. There's no waiting for the fire to catch up or the oven to heat. Meals can be started later and still be served right on time. That means less work and less time in the kitchen.

New Perfection
OIL COOK STOVE

burns kerosene, the clean, cheap fuel and gives an intense heat that can be regulated just as you want it. It does all sorts of cooking and baking just as well as a wood or coal stove—and without tainting the food. Don't cook in a hot kitchen this summer. Don't lug coal and wood and ashes. Get a New Perfection. It saves all this trouble and it's economical, too. Ask your dealer for the New Perfection.

Standard Oil Company
(California)

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USE PEARL OIL

You Can Borrow 3% Money

Money loaned at 3 per cent simple interest on farms and homes with which to pay off a mortgage, buy a home or improve property. ELEVEN YEARS TO REPAY.

INVESTIGATE

We are helping people to accumulate money and own homes of their own, and we can and will, with your effort, help you. That is why we want to make you familiar with a plan that is ahead of all others when it comes to helping the man or woman who has to work for a living accumulate money or own a home of their own.

FARM LOANS OUR SPECIALTY

The National Mercantile Co. Ltd.
F. D. PHILIPS, State Agent
SECURITY BANK BLDG. OAKLAND, CAL.

Acetylene Ranges For Quick Cooking In Country Kitchens

You housewives in the country who labor over hot stoves cooking big meals for hungry families—how would you like this convenience, which every city woman enjoys?

How would you like to do your cooking on a gas range?

How would you like to turn on your gas with a twist of your wrist—turn it up or down just as hot as you want it.

If you have ever been in a city kitchen you know how much such a range will shorten your cooking hours and relieve you of the trouble and work of handling kindling, coal and ashes.

You also know what pleasure and comfort your household will derive from brilliant Acetylene lights throughout your house and barns. To date this convenience — Acetylene for Lighting — Acetylene for Cooking — has been supplied to over 250,000 country homes.

Pilot Acetylene generators are today the most widely sold light and fuel plants in the world.

The Pilot is extremely simple to operate. You simply fill the generator with water and Union Carbide about once a month. The machine then works automatically without further attention.

It feeds the gas it makes—genuine Acetylene—direct to your kitchen range, and to stationary light fixtures, yielding handsome, brilliant, white light throughout your house and all the barns and outbuildings as well.

For full information, estimates, etc., address

Oxweld Acetylene Company
Pacific Sales Dept.
557 South Los Angeles St.
Los Angeles, Cal.

Pure Food Flavors

Flavor Your Cooking by the Drop — Not by the Spoonful

Alcono Pure Food Flavors are made from pure oils, free from alcoholic adulterations and will mix with cold water. Four to eight drops of Alcono will do the work of a teaspoonful of the old kind of flavoring extracts.

25c per tube. 6 tubes any flavor $1.25 — postpaid.

SEND FOR FREE CIRCULAR

SUNSET TEA & COFFEE CO., 212 E. 9th St., Los Angeles, Cal.

San Francisco--Los Angeles Produce Markets

Los Angeles Market

LOS ANGELES, August 5, 1914.

BUTTER

A five-cent advance was made this week in extras and firsts. The local produce exchange has fixed the standard for creamery extras at a score of 90 points, which is three points below the S. F. standard. This action is much criticized and may be rescinded.

Prices to trade 4 cents above following quotations:

Creamery Extras	.29
Firsts	.26@27
Country	.19
Ladle	.19

CHEESE

Prices to trade 1 and 2 cents higher:

Eastern Daisy	.18½
California Fresh	.14@14½
Domestic Swiss	.20
Longhorn	.19@19½
Imported Swiss	.23@25

EGGS AND POULTRY

Eggs have dropped a point and a half. Receipts Tuesday, 243 cases.

Prices to trade 3 cents higher than following quotations:

Fresh ranch, case counts	.28½
Candled	.30½
Selected	.32½
Northern Case Count	.29½
Petaluma-Santa Rosa	.30

Price to producer:

Hens, lb.	.14@19
Roosters	.9@10
Broilers, lb.	.15@16
Fryers	.15
Roasters, lb.	.18
Turkeys	.25
Ducks	.12@15
Geese	.15
Squabs, doz.	.2.50@3.00

LIVE STOCK

The following quotations are f. o. b. Los Angeles on all stock:

Hogs, 175 to 200 lbs., per cwt.	.9.25
Prime Steers	.7½
Heifers	.6¼
Calves, lb.	.8½
Sheep—	
Ewes, head	.4.00
Wethers	.4.25@5.00
Lambs, head	.4.00

POTATOES

Wholesale selling price:

Sweets, lb.	.3½@4
News, cwt.	.1.25
Northern Burbanks, cwt.	.1.45@1.55
Highland, Burbanks	.1.40

ONIONS

Wholesale selling price:

Silver Skins	.2.00
Yellow Danvers, sack	.1.75@2.00
Garlic	.8@10

VEGETABLES

Wholesale selling price:

Artichokes, Northern, doz.	.15@35
Beets, doz.	.30@35
Beans, String	.2@3
Lima	.5@6
Cabbage	.50@65
Carrots, doz.	.20
Cauliflower, lug	.1.25@1.30
Celery, doz.	.50@60
Corn, Sugar, box	.40@50
Cucumbers, lug	.25@35
Egg Plant	.5@6
Escarole, doz.	.40
Horseradish, lb.	.15
Leeks, doz.	.35@40
Lettuce, crate	.65@75
Mint, doz.	.25@40
Okra, lb.	.12@15
Onions, Green, doz. bunches	.15@20
Oyster Plant	.25@30
Parsnips	.35
Peas, lb.	.4@7
Peppers	.7@8
Bell, lb.	.7@9
Chili, lb.	.2½@5
Radish	.15@20
Rhubarb—	
Crimson Winter	.75@80
Spinach, doz.	.15
Squash—	
Summer, crate	.25@35
Crookneck	.25@35
Turnips	.30
Tomatoes, lug	.15@35

FRESH FRUIT

Wholesale selling price:

Apples,	
Red Astrachan, box	.75@1.50
White Astrachan	.1.35
Bellflowers	.90@1.00
Gravensteins	.75@1.15
Apricots, lug	.1.10@1.25
Bananas	.4
Berries—	
Strawberries, crate	.60@70
Raspberries, basket	4@6
Blackberries, crate	.1.00
Loganberries, basket	.5@6
Cantaloupes—	
Locals, small	.1.25@1.50
Locals, large	.2.50@2.75
Casabas, doz.	.1.00@1.25
Crabapples, lug	.75@1.00
Figs, 1-layer box	.75
Grapes—	
Malagas, lb.	.2@3
Muscats, lb.	.3@4
Rose of Peru, lug	.1.10
Isabella, crate	.1.00
Nectarines, lb.	.2½@3
Peaches, lb.	.1½@2
Pears, Bartlett, lb.	.2@3
Burbanks	.75
Pineapples, lb.	.5@5½
Plums, lug—	
Burbank	75
Satsuma	.80@1.00
Green Gage	.65@75
Wickson	.1.00
Kelsey	.85@90
Quinces, lug	.85
Watermelons, lb.	.½@1

CITRUS FRUIT

Wholesale selling price:

Lemons	.3.00@4.50
Grapefruit, Seedless	.2.75@3.00
Valencias	2.25@2.50
Limes, basket	.1.25

DRIED FRUITS

Wholesale prices to retailers are:

Evaporated Apples, Fcy., lb. bxs	.12@12½
Apricots	.11@12½
Nectarines	.9@10
Peaches	.6½@7½
Pears	.11@14
Prunes	.6@17
Plums	.10

NUTS

Prices named by California Walnut Growers' Association are:

No. 1	.17½
Budded Walnuts	.21
No. 1 Soft Shell Walnuts	.16
No. 1 Hard Shell Walnuts	.15½
No. Twos	.11½

Wholesale price:

Almonds—	
I X L	.22@23
N P U	.20@21½
Drakes, Thin Shells	.18@19
Pecans	.16
Peanuts—	
California, Raw	.6
Japan	.7½
Eastern	.7½
Pine Nuts	.15@16
Rice Corn	.5.00@5.25

HONEY

Wholesale selling price:

Comb, Fancy, Water White	.15
White	.14
Light Amber	.12½
Extr. Water White	.7@7½
White	.6@6½
Light Amber	.5½@6
Beeswax	.35

BEANS

Wholesale selling price:

Producer's price not far from one dollar under these quotations:

Limas	.7.50@8.00
Lady Washington	.4.75
Black Eyes	.7.50@8.00
Pinks	.4.75@5.00
Lentils	.5.50
Small White	6.25@6.50
Garbanzos	8.50@9.00

RICE

California	3.50@4.75
Broken	.3.00@3.75

HAY

Buying prices f. o. b. cars Los Angeles:

Barley	.10.00@11.00
Wheat Hay	.10.00@11.00
Tame Oat	.11.00@13.00
Alfalfa	.9.00@11.00

GRAIN

Wholesale selling prices f. o. b. Los Angeles:

Wheat	.1.90
Corn	.2.15
Oats, Red	.2.35
Oats, White	.1.60
Kaffir Corn	.1.90
Millet	.3.75
Popcorn	.4.75@5.00
Egyptian Corn	.2.20
Barley Seed	.1.45
Milo Maize	.2.00
Cal. Seed Oats	.2.25
Sunflower Seed	.5.25@5.35

FEED STUFF

Wholesale selling prices f. o. b. Los Angeles:

Bran, Heavy	.1.75
Alfalfa Meal	.1.05
Alfalfa Syrup, per cwt.	.1.05
Beef Scraps	.3.00@3.10
Beet Pulp	.1.25
Cracked Corn	.2.20
Feed Meal, cwt.	.2.25
Cotton Seed Meal	.1.85
Blood Meal	.3.60@3.70
Bone Meal	.2.00@2.10
Charcoal	.1.90@2.00
Bone Green	.1.95@2.05
Cracked Wheat	.2.05
Oil Cake Meal	.2.05
Fish Meal	.3.15@3.25
Rolled Oats	.1.65
Rolled Barley	.1.20
Middlings	.2.00

San Francisco Market

SAN FRANCISCO, Aug. 4, 1914.

BUTTER

Fancy butter has advanced a point during the week. There is little of interest on dairy market.

Extras	.25
Prime Firsts	.23
Firsts	.22
Seconds	.21½

CHEESE

California Y, American	.14½@15
California Flats	.11@14½
Cheddar	.20

EGGS AND POULTRY

A cargo of Chinese eggs arrived Monday. It created little interest. Market is stronger and slightly higher quotations than last week are noted.

Extras	.30
Firsts	.25½
Select Pullets	.25
Hens	16@18
Fryers	.20@21
Roosters, old	.12
Roosters, young	.22@23
Broilers	.18@20
Belgian Hares, lb.	.10@13

LIVE STOCK

San Francisco prices, gross weight:

Steers	.4@6¾
Cows and Heifers	.3@6
Calves, lb., live weight	.6@9
Hogs	.8@9
Wethers	.5@5½
Ewes	.4@4½
Milk Lambs	.6½@7½

POTATOES

Delta, Burbanks	.80@1.10
New Potatoes, lb	.1@1½
Sweets, lb.	.5@6

ONIONS

Yellow, sack	.80@90
Garlic, New	.5@8

VEGETABLES

Wholesale selling price:

Beans—	
Limas, lb.	.5@6
Wax, lb.	.1½@2½
Strings	.1½@2½
Cabbage, cwt.	.1.00@1.25
Carrots, sack	.35@50
Cauliflower, doz.	.40@70
Corn, Green, sack	.75@1.50
Cucumbers, lug	.15@25
Egg Plant, lug	.40@60
Peas, lb.	.3@4
Peppers—	
Bell, lug	.30@40
Chili, lug	.25@35
Rhubarb, box	.60@1.00
Tomatoes, lug	.25@50

FRESH FRUIT

Apples—	
Alexander	.50@1.00
Red Astrachan, box	.50@90
White Astrachan	.50@1.00
Gravensteins	.50@1.15
Apricots, lug	.75@1.25
Small, lugs	.50@75
Blackberries, chest	.75@1.25
Bananas, Hawaiian, bunch	.1.25@1.75
Cantaloupes, crate	50@75
Ponies	25@50
Delta, lug	.65@1.00
Casabas	.50@75
Crabapples	.50@1.00
Figs—	
Black, box, single layer	.75
Black, double layer	.75@1.00
White, box, single layer	.50
Grapes—	
Seedless	.75@80
Malagas	.65@75
Muscats	.75
Huckleberries, lb.	.10@11
Nectarines, crate	.50@1.00
Peaches, crate	.25@35
Lugs	.50@75
Pears, box	.40@1.25
Plums, crate	.25@40
Pineapples, Hawaiian	.1.50@2.00
Prunes, crate	.60@1.00
Strawberries, chest	.1.25@2.50
Raspberries	.10.00@12.00
Watermelons, doz.	.1.25@2.00

CITRUS FRUIT

Grapefruit, Seedless	.1.00@2.50
Lemons	.2.75@5.50
Lemonettes	.2.50@3.00
Limes, cs.	.4.00@5.50
Tangerines	.75@1.25
Valencias	.1.75@2.50
Mediterranean Sweets	.1.00@1.50

DRIED FRUITS

Wholesale prices are:

Prunes—1913 crop, bulk basis: 30s-40s, 7c; 40-50s, 7c; 50-60s, 7c; 60-70s, 7c; 70-80s, 7c; 80-90s, 5¾c; 90-100s, 5½c. The above are for both Santa Clara and outside; 1912 crop worth practically as much as the new crop: 20-30s, 15c in 25-lb. boxes.

Other Fruits. 50-lb. Boxes—	Standard	Ch.	Extra Ch.	Fcy.
Evap. Apples	....	9 c	9½c	10c
Peaches	....	5 c	5¼	6c
Pears	8½c	9 c	10 c	.....

RAISINS

The following prices are f. o. b. Fresno, as given out by the Associated Raisin Company, and are effective on all sales until August 1, 1914. 1912 crop practically the same figures as the new crop. 1913 crop, per lb., effective at once: Loose Muscatels (50s), 1-crown, 4¾c; 2-crown, 5½c; 3-crown, 6c; 4-crown, 6c; Seeded, fancy, 16-oz. pkgs., 7½c; do, 12-oz., 6c; do, bulk, 6¾c; do, choice, 16-oz., 7c. do, 12-oz., 5¾c; do, bulk, 6½c; Sultanas, no stock; Thompson Seedless, unbleached, 50s, 6c; 16-oz., 7⅛c; 12-oz., 5&c; recleaned, ¼c advance; do, floated, ½c advance; London Layers, no stock. Local representatives of the Association are asking ¼c higher, while several of the large packers are quoting ⅛c under the Association's figures.

The California Associated Raisin company has issued a price list dated May 28th, on the 1914 crop.

3 Crown London Layers, 20 lb. box, $1.15. 4 Crown Cluster, $1.40. 5 Crown Dehesa Clusters, $2.00. 6 Crown Imperial Clusters, $2.50. 5-lb. boxes, 50c extra; 10-lb. boxes, 25c additional Fancy Clusters, 1-lb. cartons, 20 to the box, $1.65. Fancy Clusters, 2-lb. cartons, 12 to the box, $2. Fancy Clusters, 5-lb. cardboard cartons, 4 to the box, $2.25. Bulk Layers in 50-lb. cases, $2.50. All prices guaranteed against decline to January 1, 1915, and subject to advance without notice."

NUTS

Peanuts—	
Unpolished	.5@6
Polished	.6@6½
Japanese, Shelled	.6¼@6¾
Italian Chestnuts	.6½@7

BEANS

Wholesale selling price:

Limas	.7.25@7.35
Pink	.4.30@4.40
Black Eyes	.6.25@6.50
Cranberry	.5.75@6.00
Small White	.4.85@5.40
Garbanzos	.6.75@7.00
Large White	.4.25@4.40
Bayou	.4.25@4.50
Manchurian Speckled Bayous	.4.00@4.10
Manchurian Butters	.4.60@4.80
Manchurian Speckled Bayous	.3.90@4.00
Red Mexican	.6.50@6.75
Horse Beans	.1.90@2.00

HONEY

1913

Comb, Water White	.14@15
Amber	.12@15
Dark	.10@11
Extracted White	.7½@8
Light Amber	.6½
Dark	.3½@4
Beeswax	.27@32

HOPS

1913

Sacramento Valley	.15@16
Sonoma-Mendocino	.17@17½
Oregon Clusters	.16@17
1914 Contracts	.14@15½

HAY

Under date of August 1 Scott, Manger & Miller say:

Receipts of hay during the week were 4315 tons; last week, 3100 tons. Very few consumers are laying in quantities as yet for winter use. Producers continue to make strong efforts to dispose of their crops, but very little hay is changing hands in the country districts. Choice varieties of hay are extremely scarce to date, and arrivals of this are disposed of quite readily. Arrivals of alfalfa have been light, but as there is little demand at present prices remain the same. Arrivals of straw have been light.

We quote the average wholesale prices on carload lots of new crop hay on today's market as follows:

Fancy Wheat Hay, lt. bales	.11.00@12.00
No. 1 Wheat or Wheat and Oat	.9.00@10.00
No. 2 Wheat or Wheat and Oat	.7.00@8.50
Choice Tame Oat	.10.00@11.00
Other Tame Oat	.7.00@9.00
Barley	.6.00@8.00
Wild Oat	.6.00@8.00
Alfalfa	.6.00@9.00
Stock Hay	.4.50@5.00
Straw, new	.40@45

GRAIN

Wheat, Cal. Club	.1.55@1.57½
Corn, Eastern Yellow, blk	.1.70@171¼
Egyptian, White Corn	.1.70@1.72½
Barley, Feed	.95@1.00
Oats, white	.1.22½@1.25
Oats, red	.1.05@1.12½
Millet	.2¼@2½
Flaxseed, lb.	.4@4½
Mustard, Brown	.4@4¼
Rye	.1.50@1.55
Sunflower	.4@4½
Vetch Seed	.3@3½

FEED STUFF

Alfalfa Meal, car lots	.11.50@12.50
Bran, ton	.25.50@26.50
Feed Cornmeal, ton	.41.00@41.50
Cracked Corn	.41.00@41.50
Rolled Barley, ton	.21.50@22.00

WEATHER CONDITIONS

San Francisco, Cal., Aug. 1, 1914.

Report from the various stations of the U. S. Weather Bureau, by Geo. H. Wilson, director, San Francisco.

	Rainfall Data.			Temperature Data.	
	Past Week.	Seasonal to Date.	Normal to Date.	Maximum.	Minimum.
Eureka	.00	.01	.11	60	46
Sacramento	.00	.00	.00	98	54
Red Bluff	.00	.00	.00	102	64
San Francisco	.00	.02	.01	84	50
San Jose	.00	.00	.00	94	48
Fresno	.00	T	.00	104	60
Independence	.00	.06	.00	94	52
San Luis Obispo	.00	.00	.01	82	50
Los Angeles	.00	.01	.00	86	56
San Diego	.00	.00	.00	74	60

*Since July 1.

Rolled Oats, ton	37.00@37.50
Middlings	31.50@32.00
Shorts	27.00@28.00
Oilcake Meal	32.00@33.50
Cocoanut Oilcake Meal	25.00@26.00
Linseed Oilcake Meal	27.00@28.00

Citrus Fruit Market

LOS ANGELES, Aug. 5, 1914.

With about 70 cars going forward daily the market is generally in a good condition. The quotations yesterday were about the same as formerly, but a slightly easier condition obtains. War talk has in no way affected the market.

The eastern seaboard is still supplied with great quantities of imported stock, but a reduction in receipts is anticipated because of shipping conditions. Good prices are obtained for California stock in the Middle West.

Shipments.

Shipments of oranges from Southern California to date since November 1, 1913, 34,014 cars, lemons, 2,477; total, 36,491. To same date last season: oranges, 12,460 cars; lemons, 1,900; total, 14,360. Total of citrus fruits two years ago this date, 32,365.

NEW YORK, Aug. 3.—Nineteen cars Valencias, three mixed cars sold. Market slightly easier on Valencias. Fair and warm.

VALENCIAS—	Avge.
Iris, D. M. Ex.	$3.50
Violet, D. M. Ex.	3.25
Glendora Alps, A. C. G. Ex.	3.80
Glendora Home, A. C. G. Ex.	3.15
Kenilworth, A. H., Riverside	3.25
Dandy, A. H., Riverside	2.95
Peasant, A. H., Riverside	3.15
Glendora Heights, xf., A. C. G. Ex.	3.65
Glendora Heights Foothill	3.30
Carmencita, S. T., E. Alhambra	3.00
Don Quixote, S. T., E. Alhambra	2.70
Victoria, A. H. Ex.	3.25
Lincoln, A. H. Ex.	3.15
Navajo, A. H. Ex.	2.80
Red C., Covina Ex.	2.90
Cougar, Covina Ex.	2.50
Tiger, S. B., Colton	3.05
Floral, S. B. Ex.	2.70

GRAPEFRUIT—	
Carmencita	$1.70
Colombo	1.10
Tiger, seedless	1.50
Floral, seedless	1.05
Tiger, seedling	1.20
Orchard	1.65

PHILADELPHIA, Aug. 3.—Seven cars sold. Warm.

VALENCIAS—	Avge.
Spec. Coyote, O. K. Ontario	$2.80
Spec. Imperial, O. K., Ontario	2.40
Glendora Heights, xc. A.C.G., G.H. Spur	3.10
Evolution, A. C. G., G. H. Spur	2.90
Golden Beaver, O. R. Ex., McPherson	3.10
Saddleback, O. R., McPherson	2.70
Echo, S. T., Pasadena	3.10
Arroyo, S. T., Pasadena	2.90

CHICAGO, Aug. 3.—New apples, 1.00@3.50 per barrel. Lemons, California, 4.00@6.50 per box. Oranges, 3.25@3.50. Pineapples, per crate, 1.50@3.50. Peaches, 50@1.75 per case, 15@20 per one-fifth bushel basket. Pears, 75@1.25 per bushel. California apricots, per box, 75@1.25. Peaches, 90@1.25. Plums, 85@1.50 per crate. Pears, 2.25@2.50 per box. Grapes, 2.00@3.25 per case. Cantaloupes, 1.25@2.75 per standard crate. Watermelons, 125.00@175.00 per car. Blackberries, 1.25@1.35 per 16-quart case. Red Raspberries, $1.50@2.00 per 24 pints. Black caps, 90@1.25 per 24 pints. Gooseberries, 90@1.10 per 16-quart case. Blueberries, 1.75@2.75 per 16-quart case.

BOSTON, Aug. 3.—Nine cars oranges sold. Cloudy, market unchanged.

VALENCIAS—	Avge.
Carmencita, S. T., Fullerton	$3.65
Colombo, S. T., Fullerton	3.15
Las Palmas, S. T., Fullerton	2.20
Blue Hussar, O. K., Alta Loma	3.55
Green Hussar, O. K., Alta Loma	3.25
Alta Loma, O. K., Alta Loma	2.80
Kenilworth, A. H., Riverside	3.80
Peasant, A. H., Riverside	3.35
Dandy, A. H., Riverside	2.70
Scepter, O. R., Orange	4.00

PITTSBURGH, Aug. 3.—Five cars oranges sold. Warm.

Jasmine, D. M., Monrovia	$2.90
Iris, D. M., Duarte	3.45
Violet, D. M., Duarte	3.20
Jasmine, D. M., Duarte	2.95
Maltese, D. M., Monrovia	3.10
Anoakia, D. M., Monrovia	2.90
Violet, D. M., Duarte	3.20
LEMONS—	
Violet, D. M., Duarte	$4.50

ST. LOUIS, Aug. 3.—Cloudy, warm. Market is steady. Four cars Valencias sold.

VALENCIAS—	Avge.
Green Crown, A. C. G., Azusa	$3.00
SS Brand, S. S., Orange	2.60
Golden Rule, Riverside Ex.	2.95

CINCINNATI, Aug. 3.—Cool. Two cars Valencias sold. Market is weak on small sizes.

VALENCIAS—	Avge.
Pointer, A. C. G., Azusa	$2.85
Hunter, A. C. G., Azusa	2.45
Red Raven, P. % Lett	3.05

CLEVELAND, Aug. 3.—Two cars Valencias, one mixed car sold. Market is advancing on good quality, unchanged other grades. Cool.

VALENCIAS—	Avge.
Echo, S. T., Pasadena	$3.40
Arroyo, S. T., Pasadena	2.85
Tiger, S. T., Colton	3.00
Rialto Brownie, Rialto F. Co.	2.90

DISTANCE AROUND, IN FEET.

DISTANCE OVER, IN FEET.

	16	18	20	22	24	26	28	30	32	34	36	38	40	42	44	46	48	50	52	54	56	58	60	62	64	66	68	70	72	74	76	78	80	82	84	86	88	
10	2	2	2	2	2																																	10
12	2	2	3	3	3	3																																12
14	3	3	3	3	3	3	4	4	4	4	4	5																										14
16	3	3	3	3	4	4	4	4	4	5	5	6	6	6																								16
18	3	3	3	4	4	4	5	5	5	5	6	6	6	7																								18
			20	22	24	26	28	30	32	34	36	38	40	42	44	46	48	50	52	54	56	58	60	62	64	66	68	70	72	74	76	78	80	82	84	86	88	
20			3	4	4	5	5	6	6	6	6	7	7	7	8	8	9	9																				20
22					5	5	6	6	6	6	7	7	8	8	9	9	9	9																				22
24						5	6	6	6	7	7	8	8	8	9	9	10	10																				24
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This schedule is recommended for use when treating trees infested with **Coccus Citricola (Soft Gray Scale)**, sometimes mentioned as False Soft Brown Scale, Longulus and Coccus Hesperidum.

This is the dosage schedule used successfully in the orchards of Tulare County.

DOSAGE SCHEDULE 110 % A, FOR HIGH GRADE SODIUM CYANIDE (IN OUNCES).

THE ABOVE SCHEDULE IS FOR R. & H. C. CO. 129% SODIUM CYANIDE, AND IS CALCULATED ON THE BASIS OF ONE OUNCE OF 98-99% POTASSIUM CYANIDE TO THE 100 CUBIC FEET.

FUMIGATION SUCCEEDING

(Continued from Page 126.)

may be perfectly understood: "The 85 per cent dosage being used in Tulare County is 85 per cent of 129 per cent sodium cyanide and not 85 per cent of Schedule A. This 85 per cent dosage, calculated into the Woglum system, figures 110 per cent of Schedule A., sodium cyanide."

Regarding the work done, Fred P. Roullard, commissioner of Fresno County, wires:

"Fumigation experiments and demonstrations at Mount Campbell show up well. I have examined 20 of the 25 trees treated and every tree examined appears to be a complete kill of Coccus citricola. Very little injury to the trees has shown up so far; no injury whatever when fumigated with dosages of sodium cyanide of 105 per cent or under."

Fresno County is awaking to the fact that thorough work must be done and is using a dosage of 75 to 110 per cent of the Woglum schedule A.

One fumigator writes: "I have made five different settings and all look good to me. The scale all seem to be killed."

CURED FRUIT BULLETIN

SACRAMENTO, July 26, 1914.

To Members Affliated Associations: At the meeting of our directors held in Sacramento on the 14th inst., two things of unusual importance and interest to members were accomplished. Not the least important of these was the selection of a general manager. Months have been spent seeking an available man who seemed to best combine the attributes essential to a successful manager.

The directors feel that in Henry M. Ellis, whom they have unanimously chosen as your manager, they have secured the right man. His more than twenty years in the fruit business has made him friends from north to south, has won the good opinion of the business world and the confidence of banks. His enthusiasm and sound judgment taken together will certainly place our undertaking well forward in the dried fruit industry.

Another event of more than ordinary interest to our members is the announcement of the fact that we have outgrown our present quarters and that within the next 30 days we expect to move our headquarters to San Francisco and assume our proper position among the dried fruit shippers in the center of dried fruit interests.

The opening of another dried fruit season impels us to remind growers that careful, conscientious work in the cutting shed and on the drying ground pays good dividends to growers who insist on having things done rightly. Remember that fruit cut too green loses in both weight and color. Insist that halves be completely separated by cutters and laid on the tray with pit cups straight up. Culls and windfalls should be kept separate from well ripened and well colored fruit, as mixing them in can only reduce the quality, grade and price of the whole lot. Black or dark colored pieces should be removed at time of taking fruit off the trays, as it can be done more cheaply and quickly then.

We have to tell you that the selling market on both apricots and peaches is lower—peaches especially. Some packers reported offering new crop peaches as low as bulk basis, Standard 3½c; better grades at proportionate prices, which will amount to not to exceed 3¼ to 3¾c, orchard run, to growers. We believe that these sales are being made short by speculative packers, because we don't believe that any growers have yet, sold peaches as low as packers will have to buy to resell at prices above stated. We surely don't advocate selling peaches so low because we well know that growers cannot produce peaches with any profit, even when as good a crop as this year, to sell at much below 5c, orchard run.

You may remember Mr. Dargitz' bulletin of June 9, 1913, in which he well stated the cost of producing five tons of Muir peaches green, to the acre, or one ton dried, to be fully $98.75, or practically 5c per lb. We will be glad to send copy of this last year's bulletin to any member or non-member who cares to see the figures on cost of producing one ton of dried peaches. We are not sure, with the large crop of peaches and other fruits this year, both in California and other states, that we will be able to get our growers an average of 5c for dried peaches, but we and every member should do all possible to get a decent price for peaches, and advise outside growers to try to do the same by holding for above 4c for their crops; advise your neighbors who are not members against selling their peaches too low, if they don't want to play into the hands of short selling speculators, who will make their profit on peaches regardless of the growers' loss, and it is only the growers' fault if they play into such hands.

We have sold half or more of the peaches our members will have this year, mostly for August-September shipment, at prices well above the present market, so are in a strong position for giving our members and others who may come to us good returns for their peaches, compared with what outside growers may get.

We also are in a strong position on apricots, prunes and raisins, a good quantity of which are well sold at prices rather above today's market, and have well established the fact that co-operative marketing is the right thing for our Californit fruit growers.—California Cured Fruit Exchange.

THE FINE ART OF FEEDING

(Continued from Page 137.)

growing feed and almost equally good as a laying feed. I steam rolled barley for my young chicks, filling a kettle two-thirds full, covering it with water and allowing it to come to a boil. After it has cooled it is eaten eagerly, sometimes by chicks a week old, and I have yet to see any bad effects from it.

At the Bandini Poultry Ranch I saw large quantities of whole barley being prepared for the evening meal of 1900 hens. The barley is soaked 12 hours in a tub of cold water covered with burlap, then taken out into shallow boxes about the size of a cherry box, only deeper, where it is left to drain for 24 hours, covered carefully to keep it from drying out. At the end of that time it is plump and moist, altogether more suitable for a scratch food than the rolled barley, and when mixed with a little wheat and whole corn it makes a mixture which Mr. Suits says is as good as anything he ever tried.

This is just an example of what may be done by a little thought to cheapen the ration. Sometimes it is possible to buy broken rice, cracker waste or stale bread so cheaply that it makes a material saving in the cost of the ration. Those who have sour or skim milk or who can buy it cheaply can save the expense of beefscrap, and there is nothing better for either laying or growing stock.

Read!

Why We Bought Milford Valley Lands

A Few Extracts from the Letters of Recent Buyers

"I covered 10,000 miles of country in my automobile, searching for the best farming advantages for the least money—I bought 160 acres in Milford Valley."
J. C. BELSHE
(of Missouri).

"After having investigated the best farming sections of Washington, Idaho, Wyoming, Montana, Colorado, New Mexico, Texas, Arizona and California, I have located in Milford Valley on land which I think is far superior to anything I have seen in any of the other sections."
J. H. DORAN
(Rialto, Cal.)

"My advice to the man who wants the best for the least money is—'Come to Milford.'"
D. S. STAMY
(of Iowa).

"I have found conditions that embrace everything I was looking for in Milford Valley. It's the place for me—and I want my friends to come."
LELAND S. BONHAM
(of Los Angeles).

(Extract from Western Union (Night Letter.)
"Your project is fully as good as represented. We have found extra good land, equal to best soil in the Imperial Valley. This land should be worth $200 an acre when in alfalfa."
ED RALSTON, JOHN BARRON, L. M. VAN HORN,
W. P. DOWNER,
(of Imperial Valley).

"This is the best land and water proposition I have ever seen. I am going to sell my farm and buy 160 acres in Milford Valley."
G. A. HALSTEAD
(of Whittier).

"We saw wonderful stands of alfalfa in Milford Valley which had not been replanted for 45 years. It's a great country."
FRED OUTLAND and
D. A. WEBSTER
(of Santa Paula, Cal.)

"You haven't stated all that you could have truthfully said in your booklet in favor of the Milford Valley project.
JOSEPH E. BENTON,
(Holtville, Cal.)

"My young son produced 800 bushels of potatoes to the acre on my land—netting $484."
HEBER GILLINS
(Who has been in this section for forty years).

"This is the land for men who want to make money."
W. B. WOOD
(Who has been in this valley for fifty years).

The Milford Valley project has been on the market a little over two months and this fertile $30 an acre land has been purchased by Southern California's most practical ranchers and thoughtful investors. Nearly every man who has visited the valley has bought as much land as he was able to buy RIGHT ON THE SPOT. So enthusiastic are these purchasers that they gladly wrote testimonial letters, and extracts from a few of the many are reproduced herewith. The complete letters are all on file in our offices and any prospective farm land buyer can read them upon application.

$30 an acre Adjoining Milford, Utah—on Main Line of Salt Lake Railroad

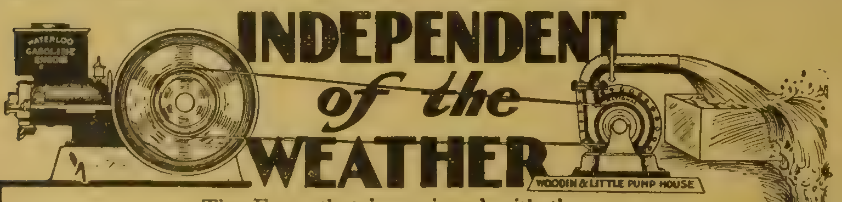
Perpetual Water Right $70 a Share—12 Years' Time to Pay for It If You Wish

The advertising of Milford Valley lands differs from any farm land advertising heretofore published, in that it consists principally of the statements of OUR OWN BUYERS. They are so pleased with their purchases that they are willing to have us publish their letter over their own signatures, accompanied by their pictures! Could stronger evidence of the desirability of a farm land offering be asked for?

But we want YOU to see for yourself—go and be convinced. Go and see the best Valley in the West—land that is being offered at a fraction of its real value. See land that should be worth $250 an acre when in alfalfa. Enjoy the glorious mountain air. As one visitor said, "This is surely God's country." Drink the pure soft water. See the great gravity irrigation system. See the bumper crops of grain, alfalfa and fruit. Write for booklet giving facts, figures, crop records, etc. Don't overlook the most unusual farm land opportunity of the last ten years.

Special Homeseekers' Excursions
Wednesdays and Saturdays.

WESTERN SECURITIES COMPANY
710 Hollingsworth Bldg.,
Los Angeles, Cal.



INDEPENDENT of the WEATHER

The Farm that is equipped with the

Waterloo Boy Engine AND THE Woodin & Little Horizontal Centrifugal Pump

is not at the mercy of the weather. No matter how hot, cold or dry it may be, no matter what the conditions, this engine and pump will work steadily and well. And backing up the long and continuous service which this pump and engine will give is the intelligent and cheerful personal service which the **Woodin & Little Pump House** extends to all its customers.

Whatever is needed in the pump line you may be sure we have it. Whatever is purchased from us you can rest assured is of the highest quality.

Those wishing detailed descriptions of the pump and engine here illustrated together with catalogue of the big line of

Pumps for Every Service and Use—Gasoline Engines—Wind Mills—Pipe-Casing—Fittings—Brass Goods, etc.—can have it free of charge. Address:

WOODIN & LITTLE—PUMP HOUSE
33 to 41 Fremont Street San Francisco, Cal.
We carry the largest line of Pumps in the United States.
Call upon your nearest dealer for our proposition.

One idea—a new one—that of fitting a ball bearing to a tractor drive wheel, forms the foundation of The Yuba Ball Tread Tractor.

On that foundation is built a machine which embodies other ideas—some new and some not—some taken from tractors, some from automobiles and motor trucks, and some developed by the designers.

THE YUBA BALL TREAD TRACTOR

In The Yuba Ball Tread Tractor these ideas are combined to produce an ideal machine for farm and general road work—powerful, compact, dependable, easy and economical to operate; able to turn in an orchard row, in the bottom of an irrigating ditch, on top of a levee, or in a narrow roadway; usable to prepare the land in Spring, operate the pumps to irrigate in Summer, harvest the crop and haul it to market in Autumn.

There is a booklet telling how.

THE
YUBA CONSTRUCTION CO.
DEPT. D 1 433 CALIFORNIA ST.
SAN FRANCISCO
WORKS: . . MARYSVILLE

Humus Vegetable Mold is the Life of the Soil, therefore get
Use Manure, Straw, Hay or Green Manure, but get **Humus**

CALIFORNIA CULTIVATOR

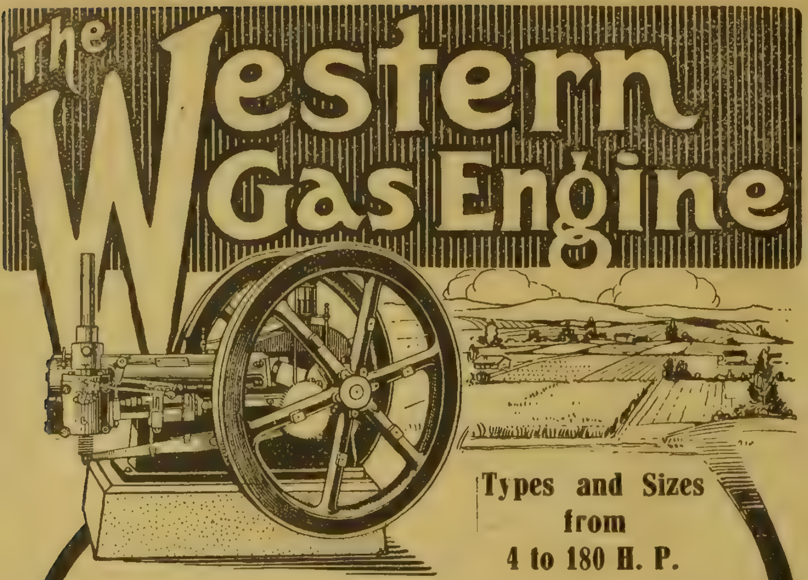
Rural Californian combined with California Cultivator

An Illustrated Weekly Magazine, Devoted to the Rural Home and Ranch

LOS ANGELES August 13, 1914 SAN FRANCISCO

Buckwheat, a Popular Summer Cover Crop

In the Search for Cover Crops Buckwheat Has Given Promise of Excellent Results in California. Two to Four Crops Can be Grown, the Crop Maturing in 30 to 40 Days, the Seed Ripening so as to Volunteer the Next Crop


The Western Gas Engine
Types and Sizes from 4 to 180 H. P.

For Shop or Farm Use

the WESTERN is the cheapest operated engine to buy. Built in types and sizes for every conceivable need—the ideal engine for either light ranch or heavy irrigation work.

Reliability, simplicity, accessibility of parts and economy—those are the reasons the WESTERN is so popular. You will find the WESTERN on most of the up-to-date ranches where nothing but the best of equipment is used. If shrewd, discriminating buyers choose the WESTERN, why shouldn't you?

Write Today for Our Latest Illustrated Catalog. It Gives Full Particulars.

Western Gas Engine Corporation
900 NORTH MAIN ST. LOS ANGELES CAL.

READ-MILLER CO.

ZEROLENE

Dealers everywhere. Ask our nearest agency about delivery in bulk.

Standard Oil Company
(CALIFORNIA)

SURFACE PIPE

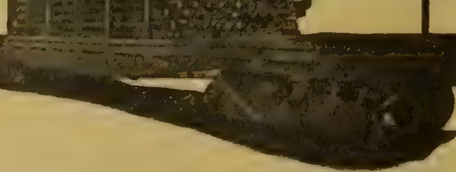
A man may be bright, brainy, capable, but if he hasn't the constitution to stand hard work, his abilities are of little worth.

The same applies to Surface Irrigation Pipe, if you don't get the kind that is built, not slapped together, you are pulling the wool over no one's eyes but your own.

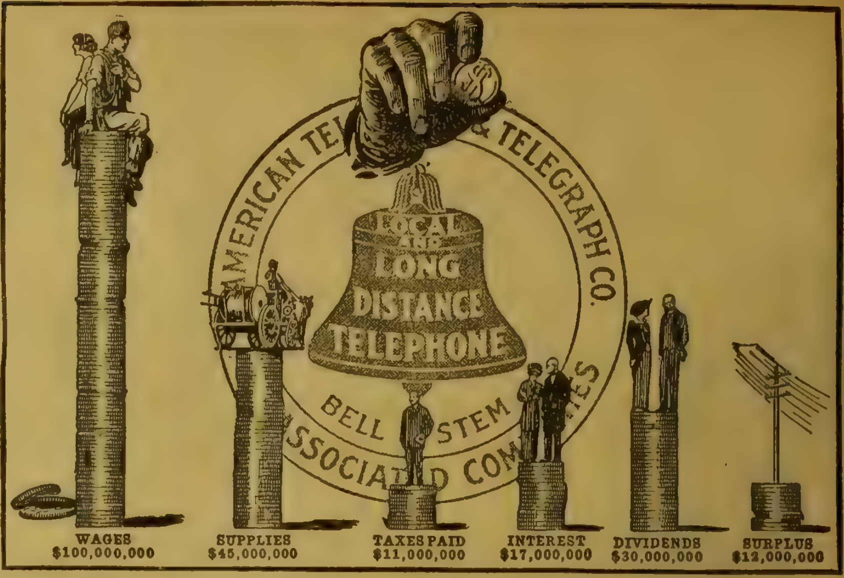
Our material was on the market when half the new concerns were still in their cradles.

Don't you think that these years of experience mean something to you?

If you must irrigate, get our prices and see the class of goods we turn out.



SURFACE PIPE CO. **201 Howard St., San Francisco**



How the Bell System Spends its Money

Every subscriber's telephone represents an actual investment averaging $153, and the gross average revenue is $41.75. The total revenue is distributed as follows:

Employes—$100,000,000

Nearly half the total—$100,000,000—paid in wages to more than one hundred thousand employes engaged in giving to the public the best and the cheapest telephone service in the world.

For Supplies—$45,000,000

Paid to merchants, supply dealers and others for materials and apparatus, and for rent, light, heat, traveling, etc.

Tax Collector—$11,000,000

Taxes of more than $11,000,000 are paid to the Federal, state and local authorities. The people derive the benefit in better high ways, schools and the like.

Bondholders—$17,000,000

Paid in interest to thousands of men and women, savings banks, insurance companies and other institutions owning bonds and notes.

Stockholders—$30,000,000

70,000 stockholders, about half of whom are women, receive $30,000,000.

(These payments to stockholders and bondholders who have put their savings into the telephone business represent 6.05% on the investment.)

Surplus—$12,000,000

This is invested in telephone plant and equipment, to furnish and keep telephone service always up to the Bell standard.

AMERICAN TELEPHONE AND TELEGRAPH COMPANY
AND ASSOCIATED COMPANIES

One Policy *One System* *Universal Service*

The Leading School in Central California

ADOLPH JOHNSON, Pres.

COMPLETE COURSES

Bookkeeping
Shorthand and
Normal Training

A term in this school will insure you a good position with opportunity for advancement. We pay your railroad fare, we rent you books and board you at reasonable rates. Write for catalog.

STOCKTON COM'L COLLEGE
Record Bldg. **Stockton, Cal.**

This coupon is worth $10.00 on a 6 months' or year's tuition to non-resident students.

Only one coupon from each student.

GROUND PHOSPHATE ROCK

Very High in Grade **Very Low in Cost**

The Natural Plant Food and Permanent Soil Builder.

California growers must meet the world's insistent demand for reasonably priced fruit by reducing production costs, not by sacrificing their profits. Let us help you lower your extravagant fertilizer bills.

California soils are deficient in Phosphoric Acid. Phosphate Rock furnishes this essential element in nature's own way at a cost of about $1 an acre a year.

We Supply Any Tonnage Desired.

UNITED STATES PHOSPHATE CO., ***Salt Lake City, Utah***
405 Marsh-Strong Building, Los Angeles.
"Perfection of Fineness in Grinding" our motto.

Advertising Rates in the Cultivator
may be had upon application

California Cultivator
Rural Californian combined with California Cultivator
Vol. XLIII No. 7 LOS ANGELES: THURSDAY, AUGUST 13, 1914 One Dollar Yearly

Continuous Clean Cultivation Destroys Humus

Fertility of Soil Depends More on Physical Condition Than Upon Elements it Contains. No Matter How Rich a Soil May be Chemically it Must Have Vegetable Mold or Humus to Encourage Bacterial Action and to Serve as a Moisture Holder

"Many thousands of tons of commercial fertilizer have been and are being applied without evidence of any appreciable effect upon yield or quality of crops, simply because used upon soils deficient in organic matter."

The above, which is from "Fertilizers and Crops" by Van Slyke, is so well said and so emphatic that we use it for the text for the special articles by practical growers the state over. We believe that disappointment has come to many California orchardists because the application of commercial fertilizers has shown no results. The elements required by the plants have been added to the soils, but the physical condition has been such that it has been impossible for the rootlets to absorb the nourishment they needed. For some years we have been growing cover crops, or green manure crops, using legumes almost entirely because of the fact that they are hospitable to nitrogen gathering bacteria. Without doubt this practice will be continued for many years, but the more we study the subject, the more we are convinced that the addition of humus to the soil is a far greater factor in productivity than the securing of nitrogen. Humus is absolutely necessary if we would grow crops.

But What is Humus?

Loughridge says: "The name humus should not be applied to all of the vegetable matter of the soil in all stages of decay, as many seem to think, but only to a peculiar product of partial decay of vegetable and animal matters brought about under conditions of moisture, warmth, a limited amount of air, and in the presence of lime. Until humification of the leaves, roots and other plant debris takes place the beneficial effects of humus itself are not obtained, and the material, while loosening the soil (sometimes injuriously), is practically inert as far as enriching the soil with its nitrogen and mineral elements is concerned."

If this result is essential to the securing of crops, it is little enough that the Cultivator should give at least this one issue almost entirely to the discussion of this one subject. We have asked many who have experimented in producing humus to give us of their experience.

* * *

First we refer to an address recently delivered by Mr. W. M. Mertz of the California citrus experiment station. Mr. Mertz is a thorough believer in the use of legumes which will add not only humus but nitrogen, and he also believes that as a rule, if care is exercised to secure a legume well adapted to the section, as much humus will be added by legumes as by non-legumes.

Mr. Mertz Said:

"As high as 20 tons of green material has been grown upon an acre, however, 10 to 14 tons is nearer the average. By this I mean tops, not including the roots. From observations made by the university I place great faith in Melilotus indica, or common yellow clover, which is an annual. The nitrifying power of melilotus is exceptionally high, far higher than that of alfalfa even. One of the very best of humus producers is a non-legume, the common malva which grows almost everywhere on the better soils of California. As a rule the vetches are not so well received as formerly. The purple vetch, however, has proved exceptionally fine for some sections. At present it is not possible to get purple vetch seed in any quantity. The common field pea is used very extensively but will not stand trampling.

Humus

Humus is essential but its value is not as fully recognized as it should be.

Humus improves the texture of soils—it makes heavy soils lighter and more easily cultivated, warmer and more receptive to rainfall. It makes light, sandy soils far more retentive of moisture.

Humus promotes chemical action in the soil—it acts directly upon inert and insoluble minerals and affords a medium in which nitrifying bacteria operate.

Humus absorbs air and water.

Humus largely prevents the crusting of soil surface.

Humus contains nitrogen and is a nitrogen fertilizer. Humus contains soluble mineral plant food.

Humus, like all organic substances, may be destroyed by direct decay through exposure to hot, dry air. Humus is not in as great supply in California soils as it should be.

Humus is hard to get and probably more expensive than the chemical elements which plants require. Locality and conditions are to be considered in planting a cover crop.

Humus can be restored to soils if the farmer wants it badly enough to go after it. Use manure, cover crops, alfalfa hay, straw, weeds, shavings, sawdust, brush—anything—but get humus.

"A mixing of legumes and non-legumes is sometimes advantageous, for weather conditions may prevent a heavy crop of the legume and the hardier non-legume may overcome adverse conditions and give a mass of vegetable matter to turn under and thus benefit the soil by the addition of humus.

"In seeding use a large quantity, for while the preparation of the land be carefully done, the furrowing to permit irrigation or the failure to get all seed at proper depth, may materially reduce the product. It never pays to economize on seed of a cover crop. With melilotus and practically all the other legumes inoculation is not necessary in most California soils.

"One favorable feature of Melilotus indica is that it gives a large quantity of woody fiber and at the same time a large quantity of lush green foliage. Care must be exercised in the use of too great a quantity of dry woody material at one time. Cellulose is a factor in stopping rather than accelerating nitrification. Melilotus and bur clover together make a most satisfactory crop."

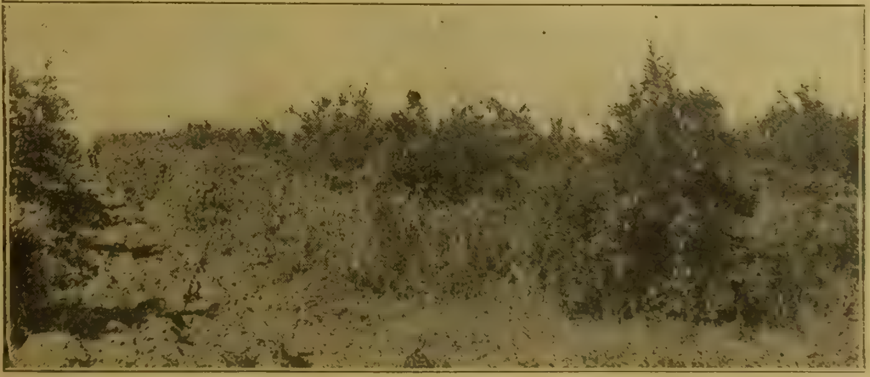
As to the economy or cost of cover crops, Mr. Mertz thinks that cover crops are cheaper than clean cultivation the winter through. The cost of seed and irrigation is more than equalled by the cost of continued cultivation the winter through.

Yield.

The yields of various crops observed by Mr. Mertz are given in the following table:

Average yield of green tops per acre. Average covering 5 years.

	Pounds	Tons
Purple vetch (one year only.)	36,699	18¼
Tangier peas	28,049	14
Barley (two years only)	27,334	14
Melilotus (four years only.)	25,916	13
Fenugreek	25,312	12¾
Bur clover	24,188	12
Lentils	24,090	12
Vetch (new ervilia) (four years only.)	23,107	11½
Vetch, common	22,960	11½
Rye (one year only)	21,766	11
Canadian field peas	18,169	9
Alfilaria (one year)	10,000	5
Average legumes	24,616	12¼



Humus Formers Grown in Tulare County

This is the orchard of which Mr. Brown speaks, the growth being vetch and native wild oats. This combination seems to give a far better growth of vetch than where it is planted alone.

The value of cover crops to the succeeding crop is shown by the following percentages of increase. The study of this table will show the reason for Mr. Mertz's preference for melilotus.

Average percentages of increase for various crops covering work of past four years:

Following cover crop or nitrate of soda.

Tangier peas	67.5
Melilotus clover	66.4
Canadian field peas	51.7
Nitrate of soda, (1080 pounds)	49.8
Vetch, ervilia	31.8
Fenugreek	30.7
Nitrate of soda (540 pounds)	29.7
Bur clover	27.2
Lentils	27.1
Nitrate of soda (810 pounds)	20.2
Vetch (common)	15.5
Nitrate of soda (270 pounds)	8.8

In addition to the above we would refer readers to the California Cultivator of January 4, 1914, in which a more extended discussion of cover crops is given by Mr. Mertz.

* * *

In referring to cover crops in Tulare County we have the following from

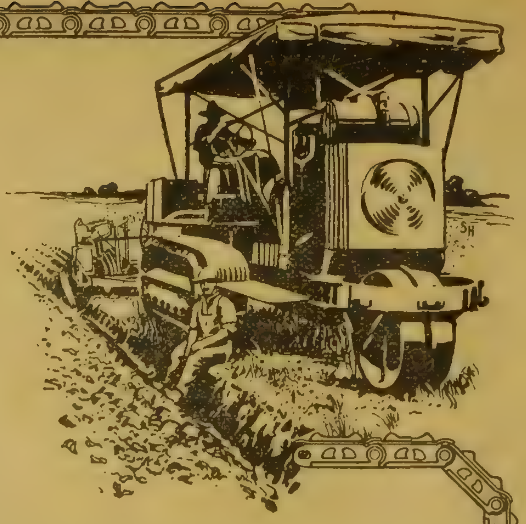
Chas. F. Collins, Tulare County Horticultural Commissioner

Cover crops in this County are confined almost entirely to the citrus district. Probably 75 per cent of the citrus orchardists grow winter cover crops, mostly of vetch and fenugreek, though some use rye and other grains. A small per cent (perhaps 25 per cent) grow summer crops, mostly beans.

Another Tulare County man writes of a cover crop, illustration of which is shown on this page.

C. T. Brown, Lindsay.

"This crop was vetch, about 50 pounds to the acre, held up by a growth of wild oats, which I never tried to eliminate from the grove. The vetch was sown in September and cultivated in with three-inch teeth, once over, not harrowed; furrowed six furrows to the middle, the water being turned on and when I finished the 10 acres, would start over again, till last of October, when rains kept it wet from then on. I should say the crop would go not less than four tons to the acre, probably more. (Probably Mr. Brown means four tons per acre of orchard, much of the space occupied by trees, not covered by vetch.—Ed.) It was plowed under between February 17 and 25, using a mold board plow and a chain to hold the growth in the furrows, not harrowed. It lay this way till the fore part of May, before irrigating, on account of pump troubles. Then furrows were made with mold board plow. We found the ground quite moist, even though the weather had been dry and warm with no late rains. Later the ground was harrowed and cultivated, and is now in fine condition, taking the water well. There seemed to be no trouble in cultivating; the material seemed well decomposed.



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As to frosts there may be a possible warning in the observations of another Lindsay gentleman, Mr. Montague White. He reports that one orchard just west of Lindsay, which showed the greatest injury from cold weather, was one in which an immense cover crop was growing. As to condition of trees in that orchard, that is, as to whether they had sufficient moisture or the cover crop had taken all the moisture from the soil and the trees were suffering, we have not been able to learn. But this suggestion is worthy of consideration, for if cover crops are grown in citrus orchards we believe there should be greatest care exercised to keep the soil well supplied with moisture.

* * *

Wm. Wood, Horticultural Commissioner, Los Angeles County.

Cow peas for a summer crop have proved very successful in the Rivera district. This crop must be grown in summer, as it will not stand frost, and should not be tried unless the grower has abundance of water. Cow peas do best sowed in rows about 3½ feet apart; this gives plenty of room to irrigate and cultivate. The crop can be plowed under green or dry, and, if thought necessary, the peas can be harvested and the vines turned under; having abundance of time to decay and mix with the soil before the late winter or spring plowing commences.

Many Whittier citrus growers favor buying stable manure in preference to planting cover crops. The reason given by several prominent growers is that it is in the way all through the picking season; it gets badly tramped down by the pickers and teams that haul the fruit out, and often is difficult to plow or disk under when the ground becomes hard, which is often the case; and some say that there are times throughout the winter when they would like to work their ground, but cannot when cover crops are growing unless they destroy the crop before there is enough to do any good; and others claim if the cover crop is plowed under too green it sours the land. All admit that it is only a matter of time before they will have to depend on cover crops, but as long as they can get stable manure for their orchards at a reasonable rate they will use it in preference to cover crops.

* * *

Shavings and sawdust have been referred to as offering possibilities for humus making. A warning is necessary here, however, for we recall seeing a few years ago at Alhambra a streak of yellowed trees through a very thrifty orchard. The color of this block of trees was most pronounced, and inquiry was made of the owner as to the trouble. He said that so far as he knew it was caused by shavings, a deep layer having been placed over the soil in an experiment to find out whether as a mulch and later as a humus-former it would prove satisfactory. The shavings were fresh from the mill and this doubtless was the cause of the injury We have never heard of shavings or sawdust from pine or other trees proving injurious. However, these materials should be used with caution. Of course such material will require years for reduction to humus. On this point we call attention to a photograph of shavings being used experimentally in the Limoneira orchards at Santa Paula. On this point we have from

C. C. Teague, Manager Limoneira Orchards.

The shavings that we are using in our groves are used purely in an experimental way and we would not think of using them in general practice until it has been tested out. I would not consider it advisable to mention shavings as a means of getting humus until they have been pretty thoroughly tested out, as there is a possibility that injury may result. The only means I know to secure more humus in the soil is cover crops, stable manure and straw.

* * *

Some growers have used a cutter similar to an ensilage cutter to work up prunings from orchard into small pieces, turning these under to decay. To the limited extent to which this has been tested no harm has resulted and some orchardists have felt that there was sufficient benefit to justify the work.

* * *

P. J. Dreher, Pomona.

I believe the planting of leguminous crops where they can be grown to be very beneficial and the cheapest way of securing humus and nitrogen.

Where straw can be secured at reasonable prices and worked in the ground, without too seriously interfering with the work of irrigation, I think that should be done. I prefer straw plowed in, but any soft soil may be disked to equal advantage. If the straw were available I should prefer to apply it in the fall months for early winter so as to get the benefit of the winter rains to decay it.

I believe no one should allow any vegetable matter of any kind which is available at moderate cost to go to waste in the neighborhood of his ranch until it is in such condition that no more material of that kind can be used on it.

* * *

W. H. Doty, Los Angeles.

As the citrus trees have three separate and distinct periods of growth, February, May and September, each apparently for a different purpose, it has always been my plan to help them along by using a complete fertilizer in the early part of February, May and September.

The September growth, being the heaviest of all and the one in which the most can be done to help the sizing up of the fruit and also prepare the tree for a better crop the next season, I always apply a good complete fertilizer in the early part of September and at the same time put in some kind of a green crop, where the trees will admit.

I find that vetch and barley do the best for me, applying 50 pounds of vetch seed and 15 to 20 pounds of barley per acre.

It is unnecessary to say that a good deep seed bed is always essential. Putting in the green crop early and at the time of applying the fertilizer, I am always assured of a good green crop, one that can be plowed under early in January and have the ground in good condition, well supplied with yeast that encourages the growth of the bacteria that fills the ground with humus, all ready for the trees when they start the spring growth early in February. In that way I feel that the spring buds get a better start, make a better bloom and set a better crop. There is nothing better than stable manure in the right place (which is under an orange or lemon tree) but it is a matter of cost.

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Securing Humus

General Discussion of Methods of Securing Vegetable Mold or Humus for Soils.

Written for the California Cultivator By Carrol B. Smith, Redlands

The necessity for humus and its importance to agriculture increase with time and the continued use of land. Especially is this true where irrigation and frequent cultivation are practiced. Both favor the rapid consumption of humus which is removed by the very large crops resulting from intense cultivation. And as humus, with its various activities and functions, is the very life of a productive soil, it must be consistently renewed.

When the agriculturist speaks of humus he refers to the total amount of organic matter in his soil in all stages of decay. Usually he has in mind such materials as stable manure, straw, damaged hay or the volunteer growth of weeds which he plowed under, etc.

When the chemist of the laboratory speaks of humus he means only a portion of the total organic matter—that portion which is soluble in a weak solution (four per cent) of ammonium hydroxid. The chemist's definition has reference to that part of the organic matter so far decayed as to be available to plant life, while the farmer's definition includes all the organic matter—decayed or not decayed——available and potential. The term "humus" as used in this article will refer to the total organic matter of the soil.

Action of Humus

The chief benefit derived from humus is the improved mechanical condition of the soil. Cultivation is easier and cheaper. The moisture holding capacity is increased. A soil rich in humus is more friable, of finer texture and does not bake easily. Without this improved mechanical condition of the soil all the operations of the farm become expensive and uncertain. Cultivation cannot be so thorough and must be more frequent. Root systems are not so deep. Slight drouths affect the crops. The soil has no life and cannot resist unfavorable weather conditions. Under such conditions the returns are less and the expenses greater.

The second chief function of humus is to supply the needed nitrogen. No humus, no nitrogen, is a cardinal principle in all farming. All nitrogen comes from some form of organic matter. Even the Chilian nitrate beds are supposed to be the result of former deposits of organic materials.

Besides these two functions just given, humus is essential because it creates a more uniform and warmer temperature in the soil. Successful crops are very dependent on warm, even temperatures. Then there is the process of nitrification and the formation of carbonic acid which makes soil moisture what it should be and enables it to make the naturally insoluble forms of plant food available. There are other factors of fertile soils dependent on a good supply of humus.

Humus Materials Obtainable

There is no substitute for humus; so we ask what is the cheapest and best way to get it? Common practice in some of the best cultivated sections of the country has answered the question for the time being. But more attention must be given this subject in the future. More area is needing humus every year and the supply today is not unlimited. I believe the citrus experiment station at Riverside will have new and important data on this subject in the near future and it will not be too early by the time they get it.

The most popular and cheapest sources of humus today are the leguminous cover crops grown in our orchards in winter. These include the Oregon winter vetch (Vicia sativa), the hairy vetch (Vicia velosa), and the Canadian field pea. The southern cow pea, really a bean, is gaining favor as a summer cover crop wherever sufficient water can be had, but on this account will not come rapidly into use. It is too subject to frost for winter use.

Besides the legumes mentioned, refuse straw (threshed) and damaged hay, including first cutting alfalfa (with its foxtail), are in very common use.

Vetch and Peas

These are members of the large and widely distributed family of legumes or pod-bearing plants. They alone of all plants are best able to thrive in soils devoid of nitrogen, as they derive their nitrogen from the air during their growth. For this reason they are preferred to the non-leguminous plants such as barley or rye. The grain crops do not add nitrogen to the soil though their root action is doubtless as beneficial as that of the legumes and their tissue makes humus. Of the two vetches mentioned the Oregon winter vetch makes the best winter growth in citrus orchards and can be turned under earlier in the spring or even the latter part of January when winters are favorable. But the hairy vetch grows only while the weather is warm. The seeds of either variety are planted in early fall, say August 15 to October 15, and both do well while warm weather lasts. But the Oregon vetch will make good growth during the colder months. The hairy vetch remains semi-dormant until the warm weather of March and April when it shows great vigor. The Oregon or Sativa vetch is for this reason better than the hairy vetch (V. velosa).

There are at least two other varieties of vetch that promise a larger tonnage of green matter than any now in common use, but the seed supply is not yet available for general use. I refer to the Ervillea and Attropopurea varieties. The Daisy carpa is also very promising.

Cost of Seed

The price of seed is often an important factor. The German seed (imported) is nearly always cheaper than the American product but has a lower percentage of vitality. The Oregon crop is occasionally damaged by drouth so that the seed does not fill out well and the supply is so shortened as to raise the price. The usual price this season is $3,50 to $4.00 per 100 pounds, using 25-50 pounds per acre, the larger amount where trees are small and the whole ground covered. It is advisable to use plenty of seed. The average citrus orchard

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Canadian Field Pea.

The small white Canadian field pea seed is an old favorite. Of late years it has been used less because vetch seed was cheaper, but it has much in its favor. It is a vigorous all winter grower, gives good tonnage of green matter, and has a large tap root. The seed is larger than vetch seed and requires about 70 pounds per acre average.

I should say that 70 pounds of small pea seed would have same covering capacity as 40 pounds of vetch seed.

Tangier Pea.

The Tangier pea is a new promising variety. The seed is not yet plentiful. It will give a larger tonnage of vine than the Canadian, has tap root and is very vigorous. It is a good winter grower. If seed were available and cheap enough it would be superior to either the Canada pea or the Oregon vetch on account of its vigorous rapid growing habit and consequent amount of humus matter.

Root Systems.

The root systems of the legumes mentioned differ. The vetch has a fibrous mat of roots which tends to spread sideways with very little tendency downwards, probably due to easy development in loose top soil. There is very little or no tap root. The total amount of root, or its vegetative mass, is, however, considerable, and under equal conditions of growth and development, probably exceeds the peas. As a source of humus this root mass of the vetch is very important even though it tends to develop near the surface.

The field peas have well-defined taps, very long, with good resistance or penetration even in quite hard soils. These taps have good laterals, the number dependent on the open, rich nature of the soil. The Canadian pea root will go down four feet or more in a good sandy loam free from hardpan, between September 15 and January 15, in an average Southern California winter.

When and How to Sow Seed.

The seed of either vetch or peas can be sown between August 15 and October 15 with good chances of getting a profitable catch or stand. Vetch should always be put in before October 1, the earlier the better the growth. Peas will usually do well even when planted as late as November 1. But a more satisfactory stand will result with September planting.

Allowance must be made for furrows for winter irrigation, when necessary. So the usual practice is to first irrigate thoroughly and cultivate as though nothing were to be planted. Then drill in the seed about three inches deep and furrow out immediately or the day following. These furrows remain all winter, or until the cover crop is turned under. The depth of drilling seed will vary with soil. In light sandy soil four inches might be better and in heavy soil two inches sufficient. It will depend on locality and moisture conditions.

Some prefer to broadcast the seed just after irrigation and then cultivate thoroughly and furrow. The furrows must be in before the seed sprouts.

Others sow or drill seed before irrigating and allow those furrows to remain But where soil is a good loam or heavy the seed is apt to rot from excess water. Sandy soils may allow seed to be sown before irrigation. By irrigating first and thoroughly cultivating before planting, the ground is well loosened and the seeds come through better. By this method there will be no baking until after the next irrigation, by which time the cover crop is well started and better able to care for itself.

Cowpeas

Really a bean, of very great value for summer cropping.

Plow or Disk the Cover Crop

The most successful orchardists are working their ground as deeply as possible (an exception will be noted later). The object is to encourage deep rooting and a corresponding deep application of water. So I advise plowing the cover crop under. If the vine is too heavy some disk it first and then plow: The plow can do better work if ground is disked first. The only exception to this advice is the case of light sandy loam soils. There are soils in which tree roots persistently develop near the surface, no matter how deeply worked, and the continued cutting off of these surface roots reduces the crop very decidedly.

There are also soils subirrigated by nature so that the best root system is too near the surface to admit plowing. These are local problems and exceptions to the generally accepted practice of deep cultivation.

Non-Legumes.

The cereals such as rye and barley, and certain weeds like the mallow, alfilaria, etc, are certainly beneficial and desirable as a source of humus. They do not, however, increase the supply of nitrogen as the legumes do. But by their root action and development in the soil and the decay of their tissue when turned under they certainly improve the soil's condition and must be highly recommended. Rye and barley seed are cheaper than the

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legumes. The weed seeds—mallow, etc., cost nothing. All cover crops grown for humus increase the availability of insoluble forms of plant food.

Straw.

Threshed straw (usually barley) from the grain fields is a popular source of humus. It is baled and placed in the orchard between the irrigated spaces in the fall and spread over the furrows just after an irrigation. There is the advantage of a certain amount of seed left in straw which grows as the straw decays. The combination gives a good supply of humus and is freely used wherever straw is obtainable. The usual price paid is about $8 per ton delivered in the orchard. About one ton per acre of orchard is the usual application. It decays quite thoroughly by plowing time.

Alfalfa Hay

The first cutting of alfalfa is often used in place of straw and is really better, at the same price, as it contains more nitrogen. The weeds contained in the first cutting reduce its value as compared with pure alfalfa, but it is a very valuable source of humus. In years of scarcity it is fed to stock and not obtainable except at feed prices. Hay that has been damaged by rain so as to be unfiit for feed is still valuable for humus. It is handled and applied as in the case of straw.

Stable Manure

Manure is and always will be good humus material. There is not, however, enough of it to meet the orchardist's needs. Use it freely and often if not too high priced. Its plant food value is about one-third that of first cutting alfalfa and allowance must be made for the excess moisture and refuse sometimes contained. It is to be highly recommended wherever obtainable, but is not always a dependable source of humus.

Humus Value vs. Fertilizing Value

In this discussion a distinction should be made between the humic value of a material and its fertilizing value. The first has not yet been determined and may never be, but the fertilizing value of anything can readily be estimated, based on the market value of the three essential plant foods. The fertilizer value may be low and the humic value very high in a given material. The humic value to a poor soil is greater than that to a rich soil. It depends upon the agricultural need. By careful selection the two values may be well combined in one material.

Shavings, Sawdust, Culls

Such materials are good in proportion to their bulk. But they must be close at hand to be worth the haul and labor of handling. Their cheapness under special conditions is their only recommendation.

Local Humus Sources.

There are some situations where fenugreek or bur clover or yellow sweet clover (Melilotus indica) furnish more material and thrive better than the vetches and peas mentioned. These also are legumes, and what has been said of legumes earlier in this paper applies equally to them. Fenugreek is not a success in interior valleys, but is often preferred near the coast. Bur clover does well everywhere. Cheapness of seed is sometimes in its favor. Melilotus clover is promising. It grows tall, has strong, well-branched stalks and unusually good tap root. It may gain in favor as seed becomes available.

Buckwheat

This is a non-legume not in general use as it will not stand the winters. It must be classed as a summer cover crop and is possible only where excess water can be had. In inland valleys it makes an indifferent to fair growth and it is doubtful if its use will increase in such places. In coast sections where there is more moisture it is very successful and well thought of. Unless its yield of humus matter is excessive it has no special virtue over some good legume.

Cow Peas

The cow pea is really a bean and will not stand the winter cold. It is a legume and often used as a summer growth where water is plenty. Those who raise two humus crops a year (vetch or peas in winter and cow peas or horse beans in summer) believe it pays well.

Under the two-crop plan there are two short fallow or cultivation periods, one between the plowing of the winter crop, say January 30, and the sowing of the summer crop about April. The other is between the disking of the summer crop about August 30 and the fall sowing of the winter crop. The summer crop is usually disked, or if plowed, only very shallow, as the crop of fruit is maturing. and deep plowing at that time is a risk.

Most Humus in Shortest Time.

Use a combination of short fine straw and the legume that grows best in your locality. Apply both at same time. Place the bales in the dry centers. Sow the seed by one of the methods given (preferably after irrigation), then scatter the straw over the furrows just made for the winter. The legume and grain seed come through the straw together and grow as straw blackens and decays.

The result is a doubly heavy growth and they work well together. The grain plant supports the climbing vetch (if vetch is used) and the legume develops better than when running on the ground. The added warmth from the straw induces a better growth. The straw is practically rotted by plowing time and the question is only one of handling the heavier green crop.

The added lightness and fineness of the soil and the ease and depth of cultivation will be very noticeable all summer long. The way the water lasts will be very marked. The dark healthy foliage and full crop, together with the reserve strength of the orchard, will witness your wisdom and thought and care.

A PERPLEXING QUESTION

Written for the California Cultivator

By R. C. Allen, Bonita.

Your belief that "no question is more perplexing to the orchardist than that of keeping up the supply of humus in the soil" is certainly correct. Of course every orchardist knows the sort of things that will produce humus and the practical means of getting them into his soil will vary to some extent with the individual case.

Undoubtedly there is a general agreement that stable manure gives us the most positive and practical source of humus and everyone should use what he can get so long as a possible profit can be figured from its

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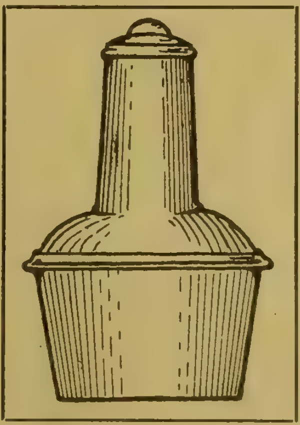

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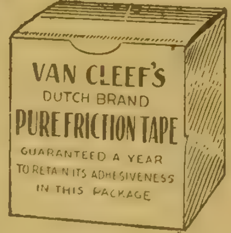

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use, but with the increased use of motor power the supply diminishes while the orchard area increases. Straw, especially bean straw, is almost as valuable for the purpose, but here again the supply is inadequate. As regards application, I have always hauled it direct from the field in the summer and disked it in. You ask if it would not have more value if plowed under deeply. As a rule one does not like to plow his orchard in the summer and thus lose moisture. Straw disked in the summer would be plowed under the following winter or spring and probably little of the humus would be lost. Even if so, there is a compensation in the fine condition in which the summer disking puts the soil.

The various cover crops are well understood by most growers. In young orchards where the ground is open they are sure to do well with proper culture, but in old orchards it is sometimes almost impossible to get good results. The citrus experiment station has conducted valuable tests which show great value in Melilotus clover, which seems likely to develop a more hardy growth in the shade of old trees than vetch. If we grow a cover crop we must have tonnage to make it worth while, and it is better to grow a heavy crop of rye than a spindling one of vetch, even though the former is not a nitrogen gatherer.

Another source of humus is the summer cover crop—again more practical for young trees than old—such as cow peas, soy beans or buckwheat. The two first are leguminous and where they do well produce an immense mass of green matter. Buckwheat occupies a position in summer crops similar to that of rye in winter as giving a sure and heavy crop.

Around Phoenix, Arizona, it is a common practice to grow alfalfa among orange trees. I believe that with us, in some soils and locations at any rate, it would be a good plan to plant citrus trees in rows 50 feet apart and grow a land of alfalfa between. The trees in such a case should be planted on a ridge so as to be well above the alfalfa. I am trying this with an old olive orchard and the experiment promises well.

When Mr. Luffman gave his talks in Riverside two years ago I was interested in his advice as to gathering every sort of vegetable trash and silt and putting it under the trees. Doubtless a lot of good stuff is burned up and let go to waste which might be put to use.

IMPORTANCE OF HUMUS

Written for the California Cultivator
By V. V. LeRoy, Claremont.

It is with a great deal of satisfaction that I see the interest your paper is taking in the subject of humus. The action of humus in our soil is not well understood by our scientific agriculturists, but it is becoming more and more sure that it is one of the most important ingredients necessary for the best results in the growing of fruit. I believe the horticulturists of California will save millions of dollars in fertilizers when the importance of humus is understood. Our soil has practically everything needed for abundant plant growth except nitrogen, humus and phosphoric acid. No amount of plant food is of value unless the plant can use it. In other words, all the elements for plant growth must be made available to the plant roots. Nitrogen is easily supplied in available forms, but from 15 years of practical experience in our arid region I believe large quantities of phosphoric acid and potash are put into our soils, which does not become available. Here is where humus gets in its work. By the action of humus and humic acid much unavailable plant food is made of use to plants. Without enough of humus in the soil great quantities of available fertilizers must be used to produce a profitable crop. This is accomplished by many, but hundreds might make their ranches profitable, who can't afford so much expensive fertilizers, by use of humus producing materials which in time liberate quantities of potash with which our soils are well supplied, and makes the unavailable phosphoric acid in cheaper forms available. In our arid climate humus is also much richer in nitrogen, about three times richer than in humid regions.

How to Get Humus.

How to get this valuable material into our soils is a question which must be solved generally by each grower, but to be successful in the future I believe this question must be solved. For years I have heard of horticulturists fertilizing in many entirely different ways, all commercial, all barnyard, part of each, some only using cover crops, others despising cover crops. Provided enough was used all have been more or less successful, but the cost of production has been large. After much study of the problem I b lieve the element of humus had more to do with the success than the kind of fertilizer.

For five years I used ten pounds of potash to the bearing tree. After reading some of Hilgard's lectures I concluded that I was throwing my money away and have not used a pound of potash since for over ten years, but have raised cover crops and supplied humus as much as I could. My crops have been uniformly good and of good quality, from six to eight boxes to the tree each year of navels. The year before last I had 5000 boxes on four and one-half acres after many years' use of cover crops (I planted my first cover crop in 1900).

The Cover Crop

I believe among large trees a cover crop does not produce nearly enough humus, as so little space can be covered. Still it largely pays because of many other uses. It stops washing, it makes many little canals for the rains to enter, below any hardpan or plowsole, thus storing moisture for the next summer, but above all it stops the constant cultivating and stirring of the soil burning out your humus and stimulating your trees toward winter growth, thus making them more easily frozen. From ten years' observation of a dozen orchards I firmly believe that constantly cultivating groves causes much more abundant dropping of fruit.

Cheapest Forms of Humus Supply

Bean straw and alfalfa hay are in my opinion the best and cheapest forms of supplying humus at present because of the large amount of nitrogen, as well as humus, in them. I would spread it in January and thoroughly disk it about the last of February.

Cover Crops at Minnetonka

Mr. Chauncy S. Sheldon of Minnetonka Ranch, near Claremont, has for two years been trying a somewhat new method of cover cropping for supplying humus. He sows a cover crop in the fall, the usual way, with furrows for irrigating, and leaves room for a furrow close to the tree. In February or March he plows every other space and lets every other space grow all summer, and matures a big crop which seeds itself for the next fall's growth. In February, a year after, he plows up the year's growth and allows the alternating space to grow its year, so continuing. The trees are doing well and producing good crops at a minimum outlay for fertilizers. His soil is in splendid shape and the trees do not show the lack of moisture during the summer although he has no more than the average amount of water. Humus is a great aid in holding the moisture in the soil until used. This looks like a system worth trying.

COMMERCIAL FERTILIZERS AS AN AID IN PRODUCING HUMUS

Written for the California Cultivator
By Ira S. Chapman.

There are many limiting factors in all crop production. By using the words "limiting factors" we are, in a broader way, stating Liebig's law of the minimum according to which the crop yield will be limited by the one particular plant-food element which may be deficient in the soil.

Buckwheat

Buckwheat grows fleshy stems, yet containing much of vegetable fiber. It has been grown more extensively this year than ever before in California orchards. See photo of buckwheat in orchard on cover.

This is true as far as it goes, but other factors aside from the lack of plant-food often limit crop production. The law must be extended to include such conditions as temperature, lack of moisture, excessive moisture, poor drainage, alkali or acid conditions, and soil texture, as well as poor cultural methods such as lack of or excessive pruning, improper cultivation, and humus. Any of these may be the determining factor which limits the yield.

As soon as one limiting factor is recognized and removed the production is raised to some certain point. Here another condition becomes the crop limiter and must in turn be remedied, and so on.

It is not necessary here to enter upon the beneficial effects of humus. Our soils are universally low in humus and every effort should be made to conserve and increase this most valuable constituent in the soil. Humus may be maintained in the soil both by the use of manure and green cover cropping.

The greatest value which attaches to barnyard manure and the plowing under of green cover crops is the attendant increase in the humus content of the soil. Care should be taken, however, in the use of these manures to see that the soil is plentifully supplied with lime, otherwise an acid or "sour" condition of the soil may occur.

But no matter how well the humus supply is maintained, or how thorough the cultivation, enough plant-food cannot be rendered available each year without artificial fertilizers, to produce the maximum yield.

Therefore, as long as it is necessary to use fertilizers as well as humus producing mediums to obtain maximum results, we can use those methods that will accomplish results in the most economical way.

There is no question or doubt but that barnyard manure is the first and most direct way of producing humus, but green cover cropping accomplishes the same thing. Certain materials or constituents contained in commercial fertilizers will increase the growth of cover crops. Most green crops used are leguminous plants, and as these plants withdraw most of the nitrogen required in their growth from the atmosphere, there remains only phosphoric acid and potash to be removed from the soil. These two elements are usually the principal constituents of a summer or fall fertilizer, and therefore are of direct benefit not only to the fruit crop but to the cover crop as well.

The expense of maintaining humus by the use of a green crop is very slight, especially when aided by a properly balanced fall fertilizer, and there is no question but that humus plus fertilizer is better than humus without commercial fertilizer.

SUGGESTIONS FOR A WILD CROP

Written for the California Cultivator
By J. W. Garthwaite, Corona.

In deciding upon the best plant to use for a cover crop, each grower must be guided by his own peculiar needs. One grower may think it well to sacrifice bulk for nitrogen, while another may feel that the need of his soil is humus and that the nitrogen can be applied in another form. Still another may be so situated as to be in danger from floods in heavy winter rains, and feel that his greatest need is for a crop that will root so heavily and grow so strongly as to retard rushing waters and so not only protect the ground from such catastrophes as befell many orchards in the very wet districts last winter, but conserve for the good of the soil a large amount of the surplus moisture.

Having considered these and other points and arrived at a decision as to the sort of plant he wants, the grower must then consider the conditions under which his crop is to grow—such as water, time of planting, trampling and so on—and sow a crop that will tolerate any adverse conditions which it may encounter. Until a couple of years ago, vetch, mixed with barley, seemed, from the standpoint of bulk and nitrogen, to be very satisfactory. Then the vetch grew weary of its good record and declined to grow. Many looked upon this as a natural result of a dry year, but the experience of the writer was the same last year, which was not dry, and the thought presented itself that two winters ago the unfortunate vetch was trampled night after night by companies of devils with blackened faces who bore firebrands and made night hideous with red flames and black smoke; and trampled day after day by other companies of devils carrying fuel for the fires of the night shift. And last winter there was some trampling, and every winter from now on there will be some. It would seem, then, that the most serious problem before the grower who wants a good cover crop and wants also to protect his fruit from frost by any of the methods in common use at present, is to find a plant that will stand trampling.

Wild Mallow.

On the question of nitrogenous crops which will stand such usage the writer has no word, but as a humus crop of great bulk and strong rooting proclivities which will stand all sorts of abuse a word or two must be said regarding the common maallow (Malva rotundifolia). Several orchards in this district were blessed last winter with splendid stands of this plant, which in many cases had by midwinter attained a height equal to half that of a full-grown lemon tree, and had sent out such a root system that a horse could scarcely pull it from the ground. In January or February the weeds were mowed, after which a new growth was put out even stronger than the first. In spite of this great bulk of stalk and root, no difficulty was experienced in plowing after disking with a well weighted and very sharp disk. The superintendent of the orchards in question, reports however, that in many cases

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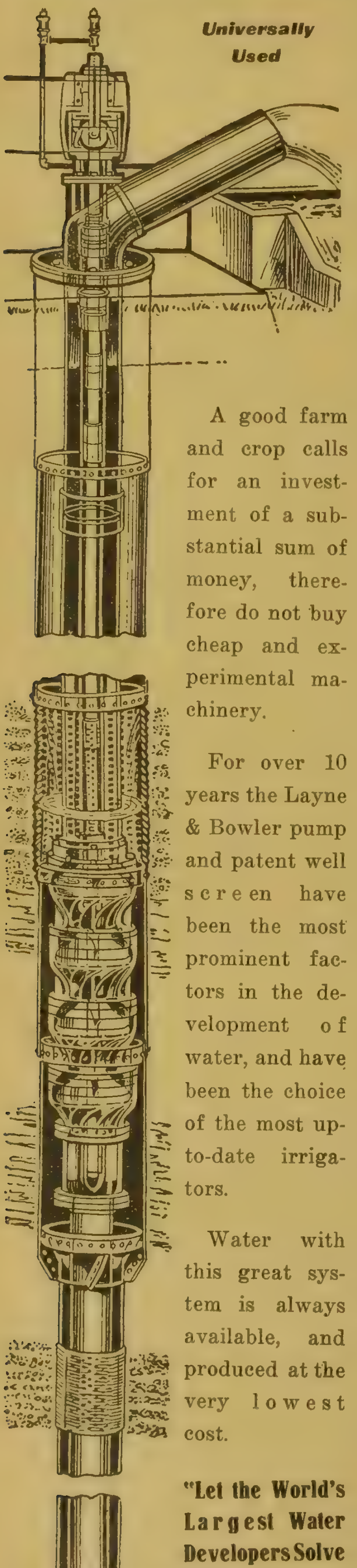

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he did not plow until summer, and in some cases not at all, and that owing to the beneficial effect of the heavy rooting of the plant, the ground is still in fine condition. He is not aware that mallow seed is to be purchased, but says his crops were all volunteer. He encouraged the weed by doing his fall work early, say in September, planting such nitrogenous crop as he wanted at that time. Then the mallow started of its own accord in any place where it had grown before. It would seem that where the desire is for a humus crop, or for a crop to protect the soil against flood, a trial of the mallow weed might be well worth while.

MORE DEFINITE KNOWLEDGE NEEDED

Written for the California Cultivator
By Fred M. Reed, Riverside.

Your letter asking for information about humus-forming materials for soils is at hand, and I hasten to confess that after 24 years of experience in fruit growing in this locality, I am as much at sea in regard to this matter as many of my neighbors. I have seen so many apparently successful humus forming practices turn out to be either neutral or failures, after a series of years, that I look with distrust on any positive statements about fertilizers or cover crops, especially where a man who has made a success in one locality claims that his methods will prove equally successful in other places and under all conditions.

I am fairly well satisfied that stable manure at four or four and one-half cents per cubic foot, is too costly a source of supply for citrus groves, either as a supply of humus or nitrogen or as a surface mulch.

Straw and Sawdust

In our locality, where the soil and air are both dry nearly all the time, the effect of straw, sawdust, shavings or stable manure made with shavings, is more of a damage than a benefit when stored in the surface soil, as all of them tend to dry the soil and make it hard.

Experiments

We have found that when such materials, and even much coarser stuffs, such as brush or palm stubs, are buried in pits or trenches below the zone of cultivation in shallow soils over hardpan or rock, that they serve as sponges to hold the moisture, and the trees are greatly benefited, but the same treatment of trees on deep moist soils does not seem to show any advantage.

Shavings Being Tested as a Humus Former
Photo By I. J. Condit

The securing of humus from shavings or sawdust has never proven very satisfactory, and experiments should be tried with caution. Never use redwood shavings or sawdust unless they have been thoroughly weathered and even partially decayed.

We have a small experiment of permanent mulch,—no cultivation or fertilizer for 18 months. The trees treated in this way are no better or worse than the other part of the orchard, which has been treated in the usual way and heavily fertilized both with stable manure and good commercial fertilizer. All have lamentably light crops set.

Return Prunings to Soil.

The practice of returning to the soil all prunings and leaves we find at least as beneficial as a source of organic matter in the soil as the ordinary grade of stable manure on the market. This material can be left on the surface until it gets brittle, a matter of ten days or less in summer, when all but the largest brush breaks up under a disk cultivator. This practice is not only cheaper than the foolish and wasteful one of burning or hauling this valuable organic material away, but I am sure that the mass of leaves and fine twigs make a much better material to mix with the surface soil mulch than the grain straws or the planing mill shavings, which if they contain either oak or redwood, may be positively poisonous to the plant roots.

Cover Crop Experience Conflicting.

As to cover crop, the experience in our locality is conflicting and unsatisfactory. No one can prove that the cover crop as usually grown hereabouts is either a benefit or a detriment to the citrus groves. We know of groves, side by side, which have had cover crops, and others whose owners have never used them, and now one system shows no advantage over the other either as to condition of the trees, crops, soil or financial returns, or lack of them. We are fairly well satisfied that a combination of vetch and rye, allowed to stay on the ground until April or May, puts a fine mass of cheap organic material in the soil, but the condition of the groves so treated certainly does not warrant one in boasting that the system is a practical success.

While these notes are merely a frank confession of ignorance on this subject, they may at least help to show the need of more definite knowledge of the matter than we now possess.

Cooperative societies to be of any benefit to the farming population must be organized, maintained, and operated by the farmers themselves for their own interests, and are not to be organized on a profit-making basis.

GRAINS FOR COVER CROPS

Written for the California Cultivator
By Chas. R. Paine, Craftonville.

Answering your letter of inquiry concerning the use of grains for winter and spring growth of cover crops, I reply that it has been quite a common practice in this region, this season especially. Growing crops on orchard areas, winter or summer, or both, for restoring humus, is now more practical than getting humus material elsewhere.

Most crops were plowed under while still green and the surface soil made mellow by the decay of the great mass of green material in the soil.

Where there was delay in getting it broken down and covered there was trouble in furrowing and irrigating, for the water was impeded in its flow, but, as I observed, the ground absorbed it as it did the rain so abundant the past season. New growth on orange trees is profuse in consequence.

This paper would rather not have an advertisement than to have a bum one. Ours are all sound and certified.

We Need More Exact Knowledge

We ranchers know only in a general way of the advantage of green cover crops, even of those non-leguminous, but we seem to be leaving the exact determination of their value to the experiment stations.

Because of well understood reasons applied fertilization (this season) was not so common as heretofore, green manuring largely taking its place.

We would like to have demonstrated to us by the constituted authorities the difference in new growth and fruiting results of different tracts, the one group fertilized as science says it should be, and the other group unfertilized, but having cover crops of various kinds, leguminous and non-leguminous, winter crops and summer crops.

Perhaps, when hard times come, on account of unpropitious seasons, and prices for the citrus crop that follow the lowering of the tariff, as one factor, we may be able to keep up the producing power of the fruit trees by supplying humus grown on the ground; of course, by such a method we are using up the natural supply of fertility. By the way, wouldn't it take us many lifetimes to do that, if we knew just how to rob mother nature of her immense supply?

I do not mean to say that applying new elements of food to a soil covered with old trees is not the part of wisdom and profitable. The monarchs of the forest make a fine living from self-made fertilizer and Whittier says: "Ever on old decay the greenest mosses cling."

Buckwheat in Grove

Just before I began to write this I went to an orchard less than a mile away where buckwheat was grown last summer and where I saw seed for a new crop sown again this spring. The plants average more than two feet in height and are very thrifty. They have no nodules on their roots and the foliage is not compact. I hope the grower will keep up the sowing for some years and that we may learn results of value. His orange crop was good last year and is as good, perhaps, as anyone's this season of varying crops.

PREVENTING FLOOD DAMAGE

Written for California Cultivator

By Georgina S. Townsend, Azusa

The terrific floods of last spring demonstrated, both upon slopes and levels, as nothing else has ever done, the incalculable value of cover crops. Orchards where the slope of the land was considerable were riddled with the rushing water wherever there was no cover crop or vegetation. The top soil was scoured off down to the feeding roots which were left exposed. Wherever the water secured a chance to gouge out it did so, leaving great chasms, yet once it hit a cover crop the eroding was immediately stopped, the waters sliding over the vegetation and filling it up with silt which proved a very valuable fertilizer to those who had in the cover crop.

Cover Crop as Soil Binder

The above photo, taken by J. R. Garthwaite in the foothills not far from San Gabriel River, is a good "horrible example" of an orchard in which there was no cover crop. The soil had been kept thoroughly cultivated and when the flood of 1914 struck the orchard every particle of surface soil was washed away and in its place a mass of boulders and gravel was deposited. The surface of other orchards nearby in which heavy crops of rye or other soil binders were planted were preserved almost intact. This is ordinarily a secondary consideration of cover crops, though in this particular case a most vital one.

The greatest damage was done along the washes where the storm waters carried away whole acres of land, with big trees. A few places were wholly protected and saved from destruction by various plantings along the edges of washes. Those who had eucalyptus bordering the washes lost less than those who had nothing, and borders of bamboo protected land to a great extent, but the most valuable of all seemed to be the pampas. In some places there are long hedges of this formidable plant, and against them the waters beat with terrific force, but without effect. Those who have land bordering upon even the tiniest wash would do well to plant the whole edge with pampas roots. The plant itself makes an attractive appearance even when not in bloom. It requires no care. It is far easier to secure than any made protection. Cement and wood and stone went out with the first rush of water in almost every place where they had been used, but the sturdy pampas turned aside not only water but the debris which it carried. It seemed impregnable.

The vetch cover crops did not protect the ground from the ravages of the water as well as some of the other crops, notably mustard and mallow. These tough, deep-rooted plants seemed to bind the soil more firmly and present a more wiry resistance to the water than did the vetch. We had planted our ten acres to peas, which did not make a very good stand during the winter, but mallow and mustard had volunteered until we had a heavy crop all over the orchard which stood four to five feet high at the time of the flood. The orchard to our east, some 40 acres or more, was bare, and had just been nicely cultivated so that it was soft and soluble as sugar. The Big Dalton when it broke over its bed came tearing down across the roads, ripping out cement walls and all obstructions, and tore across this cultivated ground, leaving it in great chasms, and carrying away several acres. Part of the volume of water poured down upon our ten acres, but striking our cover crop, silted it up and slid over. Not a particle of gouging was done where the ground was covered with growth, and from one to three feet of silt was left upon our land. This was exceedingly rich, even if we were obliged to distribute it after the storm was over. The slope of the land was great, so that the trees upon the lower edge were three or four feet under silt, all of which had to be removed.

SUMMER COVER CROPS

Written for the California Cultivator

By R. R. Snowden, Los Angeles.

I have found a deficiency of humus in the citrus orchard soils of California the rule rather than the exception, notwithstanding nearly every orchard annually produces a cover crop which is plowed under. That clean cultivation during the summer months is responsible for this condition is generally recognized.

Treatment of Summer Crop

In my opinion the best method of restoring and maintaining the humus supply is to grow a summer cover crop—preferably a legume—cut it as soon as sufficiently grown and allow to lie on the ground till after the first rain, then plow under. Plow after each rain as soon as the soil is in proper condition, thus securing the absorption and retention of practically all the water falling upon the land. While there would be produced an increased demand for moisture during the growth of the cover crop, this will probably be fully offset by the better conservation of the rainfall water, and after the first winter of this treatment the extra demand for water will be met by the soil itself with increasingly favorable moisture conditions. It might be advisable to follow Mr. Gerald Geraldson's plan of alternating this with clean culture in such a way that every two years each midrow will have received both treatments yet at no time having adjacent midrows alike in the summer.

Melilotus Indica Recommended

The legume I recommend is the yellow-flowered sweet clover or melilotus indica. This plant is deep-rooting, has a large root system, and compared with alfalfa will produce more dry matter in a given time. A portion of the humus produced will be deeply placed within the soil with corresponding improvement in aeration and tilth. These factors together with protection of the soil from the summer sun will encourage the development and activities of the beneficial bacteria and earthworms, both of which are essential to the highest efficiency of the soil.

Irrigation Through Cover Crop

It may be objected that the presence of the cover crop will hinder the movement of irrigation water. This obstruction may be minimized by opening the irrigation furrows after the seed has been sowed, leaving the furrows freer from growing plants.

But even if some difficulties are encountered in this practice, the maintenance of an adequate humus supply is of such importance as to justify some sacrifice in other directions.

All the above suggestions are offered, assuming as a condition precedent to success, the maintenance of a proper chemical status of the soil.

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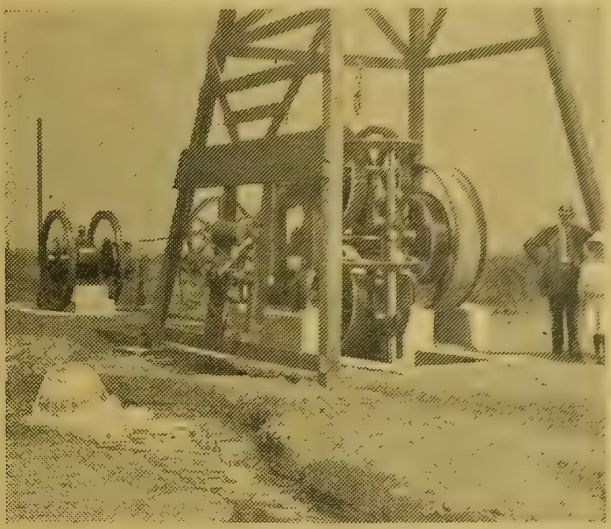

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Humus

The use of cover crops as a fertilizer and a means of adding humus to the soil has become established among the most progressive orchardists. The value of legumes in adding available nitrogen to the land is recognized in every line of husbandry, and the fruit grower has found the addition of humus a great saving in irrigation.

Fenugreek

Vetches, Burr Clover, Melilotus Clover are all highly productive of humus and nitrogen in soil. Fenugreek makes an especially dense growth and grows to excellent advantage in heavier and poorer soils.

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A Journal of Horticulture and Agriculture

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INTERNATIONAL COMMERCE

We have from Mr. David Lubin, the Californian of whom we are all proud, who is now representing the United States in the international institute of agriculture at Rome, a letter in which he urges consideration of the proposal for an international conference on the regulation and control of ocean commerce by means of an international commerce commission. The maintenance of such a commission would aid in steadying the world's prices on staples. It is suggested that this conference be held in Rome in 1917.

ESSIG TO U. C.

We have letter from State Horticultural Commissioner A. J. Cook informing us of the resignation of E. O. Essig as secretary of the commission. Mr. Essig has accepted work in the entomological department of the University of California, so that California agriculture will still be benefited by his services.

SWITCHING CHARGE

Shippers who have had occasion to send produce to San Francisco or Los Angeles will be pleased to learn of the ruling of the interstate commerce commission abolishing the switching charge of $2.50 per car. This charge has been levied for years in these cities, while it has not been in cities of the East, and Pacific Coast shippers and receivers have felt it an unjust discrimination.

CALIFORNIA STATE FAIR

The premium lists of the California state fair are being mailed. Anyone interested should write the secretary, E. J. Delorey, at Sacramento. Mr. Delorey has only recently been appointed to his office as secretary. He was formerly secretary of the California Breeders' Association, also of the Los Angeles Driving Club. The premium list is the largest and most complete ever issued by the state agricultural society. We believe the fair will follow suit and be the largest and best yet.

WHAT IS HUMUS?

The above question is better answered in the articles in this issue than it can be on this page, but we take occasion to call attention to one answer given by Mr. Doty in his article. Mr. Doty does not believe that humus is formed as the result of decaying vegetable mold, but is a growth induced by bacterial action made possible by decaying vegetable matter. In this regard, permit us to give Webster's definition of humus: "A brown or black material formed by the partial decomposition of vegetable or animal matter; the organic portion of soil." But fortunately the question at issue is not a vital one, for Mr. Doty and all others agree on the necessity of securing humus. Whether a bacterium manufactures it in one way or another is a small matter, provided we get a sufficient supply.

DON'T SUMMER FALLOW

"Tillage is manure" and "Air is manure" are common sayings with writers who urge better culture of our soils to secure better returns. Both are true. Bacterial action is secured in soil only by the admission of air, and air is introduced into the soil by tillage. Consequently, increased fertility and moisture holding capacity as a result of summer fallow have induced many farmers to follow this method. Perhaps there are circumstances when it is justified by results. But there is one result often overlooked by the farmer until his soil becomes of such a putty-like consistency that he is compelled to stop and observe. Summer fallow is sure death to humus in the soil. Especially is this true in California's interior valleys, where the scorching sun soon destroys the life in the soil. Don't summer fallow in California if you would maintain your soil at the highest productivity.

POTATO CONVENTION

State Horticultural Commissioner A. J. Cook writes regarding the potato convention which will be held in Stockton in September. The intention at first was to hold this convention during the present month, but experts from the department of agriculture at Washington, whom it was hoped could be secured, were so occupied that they could not come until a month later. Now Dr. Cook sends us copy of Secretary Houston's letter in which he states that Mr. W. A. Orton and Prof. Wm. Stuart will attend the convention and be able to arrive about September 20, and suggesting as dates for the convention either the 24th and 25th or 25th and 26th. Dr. Orton is pathologist in charge of truck disease investigations, and Prof. Stuart has been in charge of potato investigations. In addition to these specialists other features will be on the program, and Dr. Cook assures us it will be one of greatest interest.

GRAVENSTEINS

King Gravenstein ruled all of last week in Sebastopol, one of Sonoma County's beautiful little towns. It has been our pleasure to attend several of these shows, and they are indeed most worthy of the effort of Sonoma County's apple growers. Regarding the present year's show we quote from a letter received from Commissioner A. J. Cook, who had the choosing of the judges who placed the awards:

"The apple show was superb. I doubt if another such collection was ever got together. In the hundreds of boxes that we examined we only found one worm, almost no scab and the discounts were very light indeed and came almost all from lack of stem or light bruises. This exhibition proved beyond doubt the value of such exhibitions. They have made Sebastopol famous and have called the attention of the whole country to the wonderful Gravenstein apple and, more than all, have resulted in securing a pack that is very superior. This will alone warrant all the expense incurred.

HUMUS

Doubtless every reader of the Cultivator is interested in the maintenance of soil fertility. That this particular issue is given almost entirely to discussion of cover or green manure crops will call for no apology. Almost every department is crowded out to make room for it.

Some years ago when it was seen that the supply of stable manure was not sufficient to maintain soil fertility the world felt great relief when the almost inexhaustible supply of bones was found scattered over the great plains, and thought, "There's the solution of the phosphoric acid question." With Germany's mines producing the required salts of potassium and Chile furnishing the nitrates, the chemist felt that he had figured out formulas which would bring greatest profit to the farmer. But too often the application of these chemical manures failed of best results. Sometimes the failure was charged to the dishonesty of the fertilizer mixer—and possibly this may have been correct to a degree—but careful investigations have shown that the elements of fertility are not the only requirements of a productive soil.

Bacteriology and soil physics entered into the discussion, and today the farmer understands enough of soil conditions to know that the question is a wonderfully complex one. This issue of the Cultivator looks at the question from only one angle, that is, how we may best restore and keep up the supply of humus in our soils. The discussions by those who have succeeded in their orchards is intensely interesting and we hope will lead to more consideration of this matter of vegetable mold in our soils.

Agricultural News Notes

The Panama canal is now open to commerce.

Russian thistles, cut young, are made into silage by New Mexico farmers.

Anti eight-hour law organizations have been formed in 20 counties of this state.

Apple growers and traders last week held their twentieth international convention in Washington.

Kansas began to send wheat to market this year on June 20. The usual time for the first car is July 1.

Farmers of Sedgwick County, Kansas, are learning to irrigate. They have had 20 pumps in use this season.

Up to the middle of July Florida's citrus shipments amounted to 21,000 carloads. The season closed the last of July.

New Mexico will have an extensive exhibit of sheep and wool at its annual state fair at Albuquerque, October 5-10.

Thirty-five nations have accepted the invitation of the United States to participate in the Panama-Pacific Exposition of 1915.

Hundreds of sheep were burned recently in the Bourbon stock yards at Louisville, Kentucky. A car of oil on tracks near the yards exploded burning many loaded freight cars and spreading to the sheep yards.

That all ocean freight rates be regulated by an international commission similar to the interstate commerce commission is the proposal of David Lubin of California, delegate to the international institute of agriculture at Rome.

A pest of grasshoppers is being fought by farmers of Fulton County, New York. The state department of Agriculture and department of entomology of Cornell are on the ground investigating and giving advice as to best means for destroying the hoppers.

Last year nearly 100,000 boys in 11 southern states, each raised one acre of corn. In the same states more than 33,000 girls each raised and canned one-fourth acre of tomatoes. This is a big showing for the work of the government in encouraging and organizing corn growing and tomato canning clubs through the south.

A national association for the extension of dairying has been organized in Argentina. It includes six commissions. The first is concerned with milk and the scientific maintenance of the dairy and the cows, the second with the sale of milk for consumption and the sterilization plant, the third with the manufacture of butter, the fourth with the manufacture of cheese, the fifth with the manufacture of other dairy products and by-products, the sixth with legislation, education and trades.

As a result of the sheep and wool conference held recently in Washington growers and manufacturers are urging a federal bounty system as a means of exterminating predatory animals on western ranges, the enactment of state laws to control dogs in farm states, the standardization of wool by the department of agriculture, the establishment of government sheep-breeding farms to determine the breeds of sheep best adapted to various conditions, and the creation of wool colleges for the promotion of more scientific methods in wool production.

Agricultural News Notes of the Pacific Coast

Northern California

Yolo County has decided not to hold a county fair this year.

Winters, Yolo County, shipped out her first Tokays July 28.

Butte County this season reports 12,500 acres planted to rice as compared with 400 last year.

Some 1000 acres of brush were burned last week in a forest fire near Willits, Mendocino County.

Over 3000 acres of the Phelan Ranch west of Chico, is being prepared for planting to rice.

The Humboldt County Dairymens' Association held its second annual picnic at Loleta, Saturday, July 25.

A full crop of Drake and Peerless almonds is promised in Yolo County. Ne Plus Ultra are reported about 65 per cent.

The packing of table grapes is proceeding without any check now since the warm weather has brought up the percentage of sugar.

Five hundred acres are planted to olives in Shasta County, according to report of County Horticultural Commissioner Lamiman.

Trial fields of tobacco planted last spring in Grass Valley are in splendid condition and it is claimed that it will be of fine quality.

J. F. Grass of Hollywood, has been appointed cow-tester of the Yolo County Cow-Testers' Association. Grass succeeds Hugh Cameron.

The biggest fruit train in the history of Eldorado County left Placerville one day last week with a consignment of 28 carloads of fruit and lumber.

The full farmers short courses in agriculture will be given at the university farm at Davis, October 5 to November 14. Horticulture will be given particular attention.

Cordelia, Solano County, is coming to the front as a shipper of fresh deciduous fruits, 70 carloads having been shipped so far this season. Much of the fruit is grown in Green Valley.

Humboldt County's farm adviser, A. H. Christiansen, has issued a report of his year's work completed July 1. Humboldt County was the first in the state to appoint a farm adviser.

The farmers of Mendocino County are building silos and buying blooded cattle and the old way of allowing cattle to "rustle their feed" is fast being superseded by modern scientific methods.

Hop picking in the Butte County fields will start about August 25, two weeks later than last year, according to the growers. Contracts for the hops are at present being closed at 13½ and 14 cents a pound.

Farm Adviser Searls of Yolo County in his July report to the Yolo County farm bureau stated that during the month he had made 78 personal visits to farms. Four spraying demonstrations were made for the control of the red spider. Fifteen demonstrations were made of the summer pruning of apricot trees. Sixteen soil tests were taken. Two hundred and twenty-five hogs were vaccinated with serum to save well animals in infected herds. Only one animal was lost.

Central California

Fresno County is shipping Malagas.

A dairy show is to be held at Modesto in October.

Rice is being produced successfully in Tulare County.

There are 5000 arces of sweet potatoes about Turlock.

Bakerfield reports heavy shipments of green fruits every day.

A Tulare County man is exhibiting specimens of white tomatoes.

An Inland Waterways Convention was held last week at Stockton.

Barley producers are holding, watching and waiting war prices.

Fresh fruit shippers are greatly relieved at the turn of the railway men's strike.

The cannery at Selma, Fresno County, is running full handed on peaches.

The Watsonville Apple Annual will make extended exhibit at the coming state fair.

The Modesto Irrigation District has advertised the sale of its $610,000 bond issue.

During the hotter weather many haymakers have done their mowing in the moonlight.

Fumigation in Tulare and Fresno County citrus orchards is proving thoroughly successful.

The harvesting of almonds is to begin early next week in the Modesto section of Stanislaus County.

Directors of the Kings County Fair Association recently met at Hanford and discussed details for the coming fair.

Tulare County peach growers are much dissatisfied at the low prices. Three and three-quarter cents is now offered for dried.

Porterville reports its crop of lemons one of the very finest. One ranch is anticipating an output of 6000 packed boxes.

Farmers living along Packwood Creek have asked an injunction to restrain the sugar company from emptying its refuse into the creek.

The San Joaquin Valley Sugar factory at Visalia is expected to run for another month. The factory is now handling 400 tons of beets a day.

Grape buyers of Lodi, San Joaquin County, have fixed a price of $20 for Tokays delivered before September 10, after that the price will be $12.50 per ton. This is lower than in former years.

The Dinuba Farmers' Union packing house started work on dried fruits the last of July. After peaches are out of the way the packing house will work on raisins practically all the winter.

A serious forest fire swept along the banks of the San Joaquin River in Madera County and pasturage and hay on several ranches were destroyed. A force of 500 fighters finally brought the fire under control.

Members of the California Green Fruit Association in the Fresno district are urging that a concerted effort of all deciduous fruit growers and shippers be made to have a general standardization law passed by the next state legislature.

Southern California

The sugar factory at Huntington Beach is now operating.

Work has begun on Riverside's new citrus by-products factory.

A Tri-County Cow Testing Association was recently organized at Riverside.

Ventura County proposes to have a representative agricultural fair this fall.

Celery growers of Orange County are now busy setting out the new crop.

Fumigation has commenced in the Lemon Grove section of San Diego County.

The last of the grapes have been brought into the packing house at Coachella.

Prospects for the bean crop in the Bolsa section of Orange County are most excellent.

Farmers of Ventura County organized on July 28 to work against the eight-hour law.

Santa Barbara County sheep men are planting carob trees expecting the pods to furnish forage.

Riverside boosters are touring the various parts of the county working up sentiment for the coming county fair.

Brawley cantaloupe growers are already planning next season's distribution. This year's crop has paid fairly well.

Beet growers of Bolsa, Orange County, are busy harvesting sugar beets. The sugar tests are reported running high.

Owing to war prices on cheese and low prices on butter, Imperial Valley dairymen are making cheese. This is especially true of the Swiss dairymen.

Imperial Valley's cantaloupe crop for 1914 amounted to 4446 cars. There were also shipped out this season 476 cars of watermelons. This latter figure includes casabas.

18,000 geranium plants are to be distributed by the Santa Ana chamber of commerce, on August 19. These are for planting along street parkings of the county, to make them beautiful for 1915.

Perris, at a recent meeting of her chamber of commerce and alfalfa growers, has decided to postpone the Alfalfa Day celebration for one year and then join in assisting to boost the county fair to be held in Riverside in October.

Superintendent Walter Packard of the Imperial Valley experiment farm at Meloland is urging all ranchers who can afford the time to spend a few weeks at Davis, taking some of the farmers' short courses offered in fruit culture. The courses will be given October 5 to November 14.

A quarantine against citrus nursery stock has been issued by Ventura County's Horticultural Commissioner, applicable to San Diego County, Orange County, Los Angeles County (except the San Dimas district and the San Fernando Valley), San Bernardino County, Riverside County and Tulare County. The quarantine became effective August 1.

The Coast

Eastern Oregon reports ideal harvesting weather.

There are five dairy testing associations in Coos County, Oregon.

Over 15,000 head of cattle have been sold from the Tonto forest reserve in Arizona.

Farmers near Pendleton, Oregon, report wheat running close to 50 bushels per acre.

The Spokane district of Washington will begin shipping prunes the first of September.

Jersey breeders of Washington County, Oregon, are organizing a breeders' association.

A survey of the timber lands of the Apache forest in Arizona was made the first of the month.

Cochise County, Arizona, is discussing the matter of a fair this fall. It will be held October 29-31.

Summer rains have been plentiful in the Tonto Basin in Arizona. The ground is now thoroughly soaked.

A new branch of the fruit growers exchange has been organized near Spokane. Its brand will be "Sunset."

The Salt River Valley of Arizona produced 250 carloads of watermelons this season. Shipments began June 12.

The annual meeting of the Hackney Horse Breeders' Association was held at Willcox, Arizona, last Saturday night.

The prune crop of the Northwest is generally estimated about one-third less than in 1913, but quality much better.

Extensive forest fires near Fernie, B. C. have done great injury to forests and 13 lumber camps have been destroyed.

The offers for fat steers at the Arizona state fair is causing many feeders to make strenous efforts to pull down the prizes.

Apple growers of the Northwest are fearing greatly reduced consumption of apples because of the European war. Oregon apples were marketed in ten different European countries last year.

The By-Products committee of the Seventh National Apple Show has issued an invitation to those interested in the manufacture of fruit by-products to attend a meeting to be held at Portland on September 10, at which time this most important subject will be discussed from all its angles.

Horticultural Inspector DeSellem is trying to get assistance from the agricultural college at Pullman, Washington, to establish a bureau of information to answer questions of growers as to fire blight. The inspectors have so much actual work to do that they cannot satisfactorily answer questions of growers.

Arizona has an initiative bill coming up this fall generally known as the 80 per cent law, which provides that any person or company employing more than five workers at one time must employ not less than 80 per cent qualified electors of the United States. This will throw out of employment boys who are carrying newspapers. For violation of the law a penalty is imposed of not less than $100 fine, and imprisonment for not less than 30 days.

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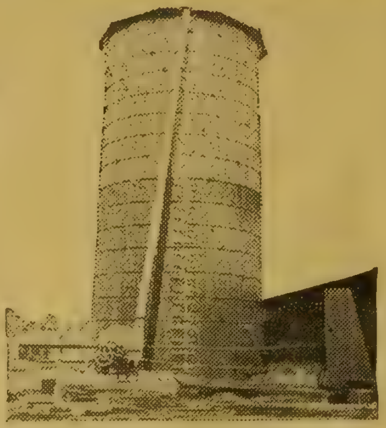

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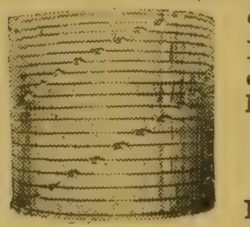

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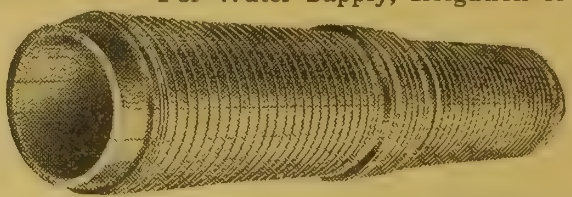

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BORAX WILL PREVENT THE TYPHOID FLY FROM BREEDING

As a result of experiments the specialists of the department of agriculture have discovered that a small amount of ordinary borax sprinkled daily on manure will effectively prevent the breeding of the typhiod or house fly. Similarly the same substance applied to garbage, refuse, open toilets, damp floors and crevices in stables, cellars or markets, will prevent fly eggs from hatching. Borax will not kill the adult fly nor prevent it from laying eggs, but its thorough use will prevent any further breeding.

The investigation, which included experiments with many substances, was undertaken to discover some means of preventing the breeding of flies in horse manure without lessening the value of this manure as a fertilizer for use by the farmer. It was felt that if some means of preventing the breeding of flies near a human habitation could be devised, the diseases spread by these filthy germ carriers could be greatly reduced. While the "Swat the fly campaign," traps and other devices for reducing the number of typhoid-carrying flies are of value, they are of less importance than the provention of the breeding. It was realized, however, that no measure for preventing the breeding of flies would come into common use, unless it was such that the farmer could use it on his manure pile without destroying its usefulness for growing plants, and without introducing into the soil any substance that would interfere with his crops.

As a result of experiments carried on at the Arlington Farms in Virginia, and New Orleans, Louisiana, the investigators found that 0.62 of a pound of borax, or 0.75 of a pound of calcined colemanite (crude calcium borate) would kill the maggots and prevent practically all of the flies ordinarily breeding in 8 bushels of horse manure from developing. This was proved by placing manure in cages and comparing the results from piles treated with borax and from untreated piles. The borax, it was found, killed the fly eggs and maggots in the manure and prevented their growth into flies.

In the case of garbage cans or refuse piles, 2 ounces of borax or calcined colemanite, costing from 5 cents a pound upward according to the quantity which is purchased, will effectually prevent flies from breeding.

While it can be safely stated that no injurious action has followed the application of manure treated with borax at the rate of .62 pounds for 8 bushels or even larger amounts in the case of some plants, nevertheless, borax-treated manure has not been studied in connection with the growth of all crops, nor has its cumulative effect been determined. It is therefore recommended that not more than 15 tons of the borax-treated manure should be applied per acre to the field. As truck growers use considerably more than this amount, it is suggested that all cars containing borax-treated manure be so marked, and that public health officials stipulate in their directions for this treatment that not over .62 (62-100) of a pound for 8 bushels of manure be used, as it has been show that larger amounts of borax will injure most plants. It is also recommended that all public health officials and others in recommending borax treatment for killing fly eggs and maggots in manure, warn the public against the injurious effects of large amounts of borax on the growth of plants. Purchasers of manure produced in cities during the fly-breeding season should insist that the dealers from whom they purchase give them a certified statement as to whether or not the manure in the particular car or lot involved in the purchase has been treated with borax.

In feeding to hogs garbage that contains borax care is also recommended. especially when the animals are being fattened for market. Borax is not a very poisonous substance and the feeding of garbage that contains it to hogs is not likely to be a serious matter. On the other hand borax in large quantities does produce gastric disturbances and for this reason a certain amount of care is advisable.

The method for using this substance in the case of stables is to sprinkle the borax or colemanite in the quantities given above, by means of a flour sifter or other fine sieve, around the outer edges of the pile of horse manure. The manure should then be sprinkled immediately with two or three gallons of water to 8 bushels of manure. It is essential, however, to sprinkle a little of the borax on the manure as it is added daily to the pile, instead of waiting until a full pile is obtained, because this will prevent the eggs which the flies lay on fresh manure from hatching. As the fly maggots congregate at the outer edge of the manure pile, most of the borax should be sprinkled there.

Borax costs 5 to 6 cents per pound in 100-pound lots in Washington, and it is estimated that at this rate it would cost only one cent per horse per day to prevent all breeding of flies in city stables. If calcined colemanite is purchased in large shipments, this cost should be considerably less. At the same time, if the borax is used on the manure only in the proportions stated, its value for use in the garden or for sale to farmers will not be lessened.

In view of this discovery, there now seems little excuse for any horse owner or resident of a city allowing typhoid flies to breed in his stable or garbage can.

It is believed that this information will greatly help the health authorities in their campaign against the typhoid fly. The health authorities have long tried to prevent the breeding of flies in city stables through the use of iron sulphate as a larvacide. In the case of iron sulphate, however, a large amount is required, and other insecticides, such as paris green or potassium cyanide, while effective in killing the flies, are very expensive or extremely poisonous. Borax, which is used freely in most households, and is readily available in all parts of the country, has the advantage of being comparatively non-poisonous and non-inflammable, readily soluble in water and easy to handle. It can be purchased at retail for 10 cents a pound, and a single pound used as directed in a garbage pail or open toilet may prevent the breeding of hundreds of dangerous flies.

The details of the experiments with borax and other larvacides will be found in United States department of agriculture bulletin No. 118.

HOG CHOLERA

Hog cholera is an infectious disease caused by an ultra-visible organism, the exact nature of which is not known. The organisms are taken into the body through the food or water, and the time elapsing between the exposure of an animal to the disease and the development of noticeable symptoms varies from a few days to three weeks.

How Spread.

This disease is very easily spread. It is most frequently introduced into a herd by infected hogs which are purchased but do not show symptoms of the disease at the time of entrance into the herd. Shipping hogs in infected cars or keeping them in infected pens will also cause the disease. The germs may be carried by dogs or coyotes which have eaten a diseased carcass, by birds which have fed in infected pens, or by persons who have walked through pens where diseased hogs have been. It is also believed by some authorities that the disease is sometimes spread through feeding hogs garbage containing uncooked bacon rinds.

How Prevented.

In case hogs have been exposed to this disease, the only known preventive is the use of hog cholera serum, which is injected into the tissues of the animal with a hypodermic syringe. This will render hogs immune. There is no cure for hogs which have become sick. They must be treated before they show a fever, for the serum to be of any use. More detailed information in regard to the serum treatment may be secured from the literature mentioned below.

Symptoms.

The symptoms of hog cholera are not claimed to be specific or constant, but any or all of the following are apt to be seen when a number of hogs are sick with the cholera, and they indicate with a degree of certainty the presence of the disease: loss of appetite; constipation, followed by diarrhea; marked weakness; staggering gait; labored breathing; convulsions; dicharge from eyes and nose; reddish spots on the belly; and a tendency to lie around or stand with the back humped.

Post Mortem Examination.

The only sure means of determining whether hog cholera is present is to examine the internal organs of a hog which has just died. The indications of cholera are small red spots on the skin of the abdomen, lining of body cavities, on the intestines, kidney and lungs. The lymphatic glands, as the ingunal, sublumbar, mesenteric, etc., are usually inflamed and enlarged. In chronic cases there may be ulcers on the lining of the small and large intestines and on the mesenteric membranes. The spleen may be enlarged and soft and the lungs may show inflamed and solid appearing portions.

Precautions.

Keep hogs under strictly sanitary conditions. The pens and troughs must be cleaned and disinfected frequently, and no wallow holes allowed to remain. Do not have hog pens near public highways.

If hogs are purchased from other herds they should be quarantined for three weeks, to ascertain whether they are free from disease.

The lots should be fenced with closely woven wire, so as to exclude dogs or coyotes which would otherwise be crossing the lots. If the disease is present in your community, do not allow neighbors or strangers to enter the hog lots.

If the disease appears in your or neighboring herds, it is well to procure serum and vaccinate all well hogs immediately. Read and become well informed on the subject of hog cholera.

Disposal of Carcasses.

If an animal dies, do not bury it or throw it on waste land. It should be burned. This is easily done, if thrown on a pile of wood and covered with kerosene.

Literature.

Bulletins treating the subject of hog cholera in detail may be obtained free from the experiment stations of the following states: Indiana, at La Fayette; Arkansas, at Fayetteville; South Dakota, at Brookings; Texas, at College Station; Nebraska, at Lincoln; Kansas, at Manhattan; and Minnesota, at St. Anthony Park, St. Paul.—W. S. Cunningham, Assistant in Animal Husbandry, New Mexico State College.

Let the dairy be as clean as your dining room, as milk is highly susceptible to odors and germs. There is absolutely no excuse for unsanitary conditions when care and a little expense will eliminate all defects.

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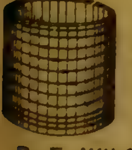

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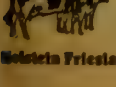

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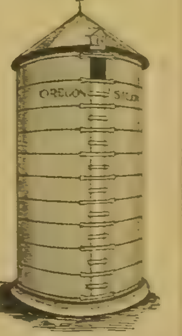

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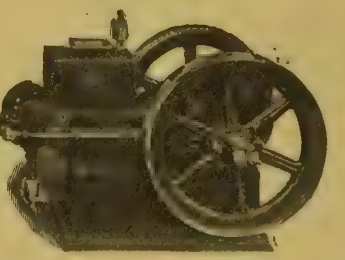

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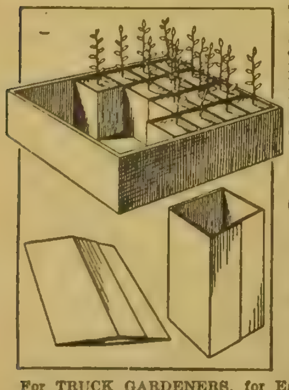

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PLANTS USED FOR COVER CROPS

SUMMER CROPS

Legumes—	When planted	Lbs. seed per acre	Approximate price
Cow peas	May-July	50	.06
Velvet or Soy beans	May-July	50	.07
Horse beans	March-August	100	.05
Alfalfa	February-April	20	.15
Melilotus indica	Nearly all year	20	.10
Tangier peas	All year	....	....
Non-Legumes—			
Buckwheat	April-August	45	.04
Corn	April-August	100	.03-.04
Sorghum	April-August	100	.04
Sudan grass	April-August	3	*1.00

*Has fluctuated greatly in price, selling as low as 10 cents and as high as $2.00 per pound.

WINTER CROPS

Legumes—	When planted	Lbs. seed per acre	Approximate price
Melilotus indica	Nearly all year	20	.10
Vetch†	August-November	60	.04
Canadian field pea†	September-Janu'y	60-80	.04
Tangier pea	All year	20	.12
Lupin†	September	20	.10
Bur clover	September-Dec'ber	20	.12
Fenugreek‡	September-Dec'ber	35	.10
Lentils			.10
Alfalfa	September-March	20	.15
Non-Legumes—			
Rye	September-January	60	.03
Barley	September-January	100	.02
Malva‡	All year	10	....
Alfilaria	September-January	8	.75
Mustard	September-February	10	.05
Rape‡	September-January	5	.08

†Good for sandy or the lighter soils.

‡Does well on heavy soil.

Sow the sorghums very thickly so that great masses of roots are not formed.

The supply of vetch seed will be very uncertain this year because of conditions in Germany, the source of the principal supply. Seed from the Northwest may possibly be secured, but not until late in the season.

Lentils tested in a very limited way. No quantity of seed to be had this year.

KEEPING UP THE HUMUS SUPPLY

Written for the California Cultivator
By B. B. Wright, Riverside.

Answering your letter of July 22, in regard to keeping up the humus supply and assuming that by humus you mean organic matter of any kind in sufficient quantity to appreciably modify the physical nature of the soil, my experience has been about as follows:

Legumes Alone Not Dependable.

No dependence can be placed on leguminous plants in the long run in an orchard, as while frequently heavy crops are secured they cannot be counted on with any certainty for a winter cover crop. Frequently they will not start well, and sometimes they are destroyed by aphis, etc., before producing any quantity of material.

They cannot be depended on at all as a source of nitrogen, even when heavy crops are secured. In fact they seem, together with other cover crops, to deplete the available soil nitrogen (nitrate) for the critical period in the spring.

Rye Most Satisfactory.

My most satisfactory results have been from rye sowed with some legume, preferably vetch; most of the effect secured has, however, been from the rye.

Even heavy cover crops, if plowed in while green, have little permanent physical effect and can hardly be discovered in the soil in a few months. If, however, they are allowed to mature, at least until fairly woody, a very noticeable effect is secured which will last until another crop is grown.

To secure similar physical conditions from manure, an expenditure of at least $50 per acre annually would be required.

I have had no experience with straw, shavings or sawdust.

General Physical Effect.

Much of the effect of cover crops on the soil seems to be from the root penetration, and this cannot be duplicated by surface addition. The effect on the soil from a cover crop plowed in is much greater than from the surface application of any amout of material apparently as large.

I believe that the organic content of the soil can be maintained or possibly increased, and the fertility otherwise can be maintained by the use of the cheaper inorganic fertilizer material and cover crops plowed in every year.

Whether strictly speaking the above procedure adds to the humus percentage of the soil, I am unable to state. I am inclined to think that much of the modification of the soil observable is due to organic detritus preventing the compacting of the soil, rather than to actual humus. I doubt if there is much formation of humus in the upper layers of our soils which are disturbed so frequently by cultivation and aeration.

MAINTAINING HUMUS

Written for the California Cultivator
By E. L. Koethen, Riverside.

Your request for a letter on the question of maintaining the humus supply in the soil comes at a time when I have been giving it an unusual amount of study.

The writer is more than ever impressed with the fact that a much larger supply of humus is essential for our orchards. I have practiced growing cover crops on my lands for a long series of years, and the result is showing in the improved condition of the soil and the reduced cost of maintenance. Whereas, in former times a hard plowsole condition prevailed, so that irrigation water flowed freely from one end of the ranch to the other, and a very small stream sufficed to carry through, making it necessary to run five to six furrows between each row of trees in order to

Continued on Page 167

Profit in the Poultry Yard

FROM GOOD LAYERS

The Missouri state poultry experiment station has 50 or more pullets which have been hatched this year that began to lay when they were about four months old or a few days over that age. In every case, no matter what variety of poultry it happened to be, the first pullets of that variety to begin to lay came from the highest laying hens of that variety or hens among the highest layers. We have never had an early maturing and early laying pullet come from a medium or poor laying hen. In every case thus far, no matter what the variety is, the pullets which began to lay when they were from four to five months old were bred from the high laying hens of that variety.

The 13 which began laying first were: Three Buff Leghorns, two Barred Plymouth Rocks, four White Leghorns, one Ancona, one Campine, one Rhinelander and one White Orpington. The Barred Rocks and White Orpington weighed from three and one-half to four pounds each, while all others weighed from two and one-half to three and one-fourth pounds each. The first eggs weighed from one to one and one-half ounces each. The eggs are practically perfect in development. A Buff Leghorn pullet weighing two and three-fourths pounds began laying at four months and five days old, and a Barred Rock Pullet weighing three and three-fourths pounds began laying at four months and nine days old. These were the first two pullets to lay. The pullets are fed good, wholesome food, but not forced or stimulated. The food given consists of equal parts of cracked corn and wheat as a grain feed and equal parts of cornmeal, wheat bran and shorts fed in hoppers, and we mix one pound of fine salt to every 100 pounds of the mash. The colony houses are kept along the edge of a cornfield or on fresh ground in an orchard. We give the young stock sour milk or buttermilk if it is available, and if not, we add 10 pounds of dry beefscraps to every 100 pounds of their dry mash. At three or four o'clock in the afternoon we feed a moistened mash, all the birds will clean up in 20 or 30 minutes. We use the same dry mash as we feed in the hoppers, but moisten it with sour milk or water. We, of course, supply grit, oyster shell and charcoal by mixing them with the feed or by feeding separately. Pure water is before them at all times. Recently in culling 6000 head of young stock raised in this way to an age when some of the pullets had begun to lay, we found only two birds that appeared to be anything like out of condition.

From our observation and records we have concluded that the season of the year in which a chicken is hatched has much to do with its growth and development and the length of time that it will require for a pullet to mature and begin to lay. That is, pullets hatched in the early spring when the trees are budding, the grass beginning to grow green, the crops growing and the birds mating; in other words, when the whole earth seems to be putting on new life, pullets hatched at this season will begin laying in a shorter length of time than full sisters to them hatched in the summer or fall. We believe that pullets hatched in February, March and April will begin laying in a shorter length of time than their full sisters hatched in May, June and July in this climate.

The smaller varieties begin to lay a little earlier or mature a little quicker than the large varieties, as a rule, but by using good judgment, a breeder of any variety can so regulate his hatches as to have them mature just in time to make good winter layers. A poultryman can so select and regulate the breeding of his flock and so regulate his hatches that his pullets will bloom or begin to lay at something near a certain season, just as the florist has his chrysanthemums bloom at Thanksgiving and his lilies bloom at Easter. By all means have them begin to lay before the winter season, for if they do not, they will more than likely not start laying before spring. Such pullets are a dead loss for several months. The margin of profit in the poultry business is so small that it will not stand such a loss

SELECTION AND BREEDING WILL TELL

The fourth generation of chickens which have been hatched since the Missouri experiment station was established are now on the farm. The first year we trapnested a pen of Buff Leghorn pullets which averaged between 90 and 100 eggs each. We selected the best layers from that pen of 10 for our next year's breeders and mated them to a cockerel hatched from the best laying hen. We have kept and bred from the best layers and the best cockerels each year since that time. The result is that last year we developed a pen of 10 pullets which averaged nearly 200 eggs each and one laid 217 eggs, and now this year we have developed a pullet which began to lay when four months and five days old and was the first to lay out of 6000 or 8000 chickens reared on the farm this season. We have kept practically within the same line of breeding and by careful selection and mating, have practically doubled the egg yield in three years' time.

Another thing, it does not mean that you have to entirely disregard shape and color to breed a good laying strain of any variety. One of our contestants in the Buff Leghorn class from Michigan entered his birds in a good poultry show two weeks before our contest began last year. We now find that some of his highest scoring pullets and some of those which won the highest honors in the show room, are also those which have made the highest records in the contest by laying the greatest number of eggs. His pen is fine in color and shape as well as leading when it comes to the egg basket. Of course, we all know that after a pullet or hen has laid a large number of eggs, it tells on the appearance for the time being, at least, but that does not necessarily mean that these birds will never be in show condition again, or that their progeny will not be birds good enough to go into the show room. We have been impressed with the show qualities and the beautiful shape and color of one of the New Zealand pens of White Leghorns. This pen comes from a breeder who has won in the contests of that country and is now also making a good record here. We are quite certain of one thing, i. e., it is not necessary to breed a flock of mongrels for them to prove to be satisfactory layers.—Missouri Poultry Experiment Station.

POULTRY SURGERY

A most interesting report of an operation on a laying hen is sent out by the Missouri poultry experiment station. The operation removed six perfectly formed eggs from the body cavity.

Poultry surgery has not advanced to a degree that we can recommend it for this, that or the other thing, but you may be interested in an operation which was recently performed at this institution.

A Black Langshan hen remained on the nest most of the time and appeared to be broody. In removing her from the nest we could feel what appeared to be eggs in the body cavity and we could apparently hear the shells grinding against each other as we would knead the abdomen. She was a contest hen and we knew if this was the condition that it would probably be only a question of a short time until the hen would die and that it was our duty to try to discover and relieve the trouble if possible.

We proceeded to make an incision in the abdomen of the hen and, to our surprise, found six normal and hard-shelled eggs in the body cavity. They had developed and passed from the oviduct to the body cavity instead of being laid in the natural way. The body cavity was filled with these eggs. Six were removed and the incision sewed up, and at the present time the hen seems to be in good health. Just what the outcome is going to be, we cannot tell, but the hen appears to be healthy and happy. We believe the operation is going to be successful, and result in saving the life of a valuable hen. However, it may prove to be another case of where "the operation was a success, but the patient died." This is the third similar case that we have had with Black Langshans. The other two hens died before we discovered the real trouble. But we operated on this one and several days have passed and the hen seems active, healthy and happy. The external stitches have been removed and the wound healed and the hen is apparently well at this time.

JUDGES AT THE LOS ANGELES SHOW

From Secretary Mumford of the Poultry Breeders' Association of Southern California we have received notice of the judges and the classes to which they have been assigned for the Los Angeles show, Jan. 6-12, 1915:

W. S. Russell, Ottumwa, Iowa, Plymouth Rocks, Rhode Island Reds; C. G. Hinds, Oakland, White Wyandottes, Asiatics, Minorcas, Andalusians, Anconas, Campines, Lakenvelders, Cornish; Geo. W. Masterson, Duarte, all Wyandottes except White, Leghorns, Spanish, Partridge Orpingtons, Hamburgs, Houdans, games, bantams; A. G. Goodacre, Compton, all Orpingtons except Partridge, Dorkings, Red Caps, Buckeyes, Sussex, Polish, Buttercups, turkeys and waterfowl.

Sunflowers along the edge of a poultry yard will provide shade in summer and also produce some excellent feed for winter.

A study of the birds and an interest in each are essential to profitable poultry husbandry.

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Give Absolute Control of Water
They are of rugged, massive construction—insuring maximum strength and durability.
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Questions and Answers

THE EDITOR AND STAFF

Questions to be answered in this department should be received at this office one week before reply is expected. Write plainly on one side of the paper and sign full name and address. Unsigned communications receive no attention.

Fleas or Lice

Can you tell me how to get rid of fleas in my stable? They bother my horses, make them stamp and kick in the night and I get them on myself when I go in the stable.—Subscriber, Watsonville.

If infesting horses, these are more probably lice. However, thorough treatment in either case is much the same. Cleaning the stables from floor to roof is the first step. All cracks where dust is lodged must receive treatment, for decaying vegetable matter is the principal feed of these pests in the larval stage. After the clean-up, especially underneath floors, spray with whitewash in which is a liberal supply of carbolic acid, or spraying buildings with kerosene emulsion is excellent. Wash stock with tobacco tea or weak solution of tobacco extract. An ointment of lard and sulphur is also good to rid stock of the pests.

Horse Beans

Can you tell me the names of some growers of horse beans and their location? What is the best way of planting beans for fertilizer and how much per acre? — Subscriber, Anaheim.

Any seed man advertising in the Cultivator can supply seed of horse beans, but any producer of beans who may wish to get in touch with the subscriber may write this office. Cow peas or beans are usually drilled in closely, then furrows laid for irrigating after the plants are up. See this week's Cultivator, which is almost entirely devoted to cover crops.

Mites in Hay

I have some barley hay of last year's crop, and in opening bales I notice small white moths flying from them. And when I am around the hay I get covered with very small insects, not visible to the naked eye. I have had loose hay before infested with what was called by old farmers "hay mites." Do we have these in this state? If so how can we get rid of them?—Subscriber, Santa Susana.

This was referred to Mr. E. O. Essig of the state horticultural commission, who answers: "I am at a loss to know exactly what the trouble is, but the hay is evidently infested with one of the mites—the exact one it would be impossible to say, without specimens for identification. Fumigation would be the only possible remedy."

Gum on Apricots

I am sending you a block of apricot wood cut from an apparently healthy limb. I lost one tree last year and could find nothing else the matter with it, and this year I have two trees affected in the same way. —Subscriber, Redlands.

Try liberal application of lime about roots. Pulling dirt away from trunk and roots and applying perfectly air-slaked lime has been recommended, also scraping diseased portion and coating with Bordeaux paste, or some use acetic acid. The cause may be too much or too little moisture at roots or a number of things which cause an unhealthy condition

Small Potatoes

I planted an acre of spuds this spring and on harvesting them find they run largely to runts, scarcely one-fourth being of saleable size. Being green, I cut the seed very small, leaving only one eye. Would this account for the smallness of the tubers to any appreciable extent? What commercial fertilizer would you recommend for fall crop of spuds on light sandy soil and would you apply it now or at planting time?—Subscriber, Baldwin Park.

Undoubtedly the fact that you cut the seed too small has a good deal to do with your unsatisfactory potato crop. The reason for using large pieces or whole potatoes for seed is to furnish nutriment to give the plant a good start before it is forced to take up plant food from the soil. Consequently a plant that starts from a small seed piece is slower in getting started and less able to withstand unfavorable moisture or weather conditions. It is quite possible that insufficient moisture at a critical time, or improper cultural methods may have something to do with your results. We cannot tell you what commercial fertilizer you need to use without seeing an analysis of your soil. As a general thing manure applied the year before potatoes are planted is very beneficial. If you could manure an alfalfa field this fall and plow it up for next spring's crop you would have a good condition. Well rotted manure applied to alfalfa land to be plowed now and prepared for a fall crop would give you fertility enough, but scab sometimes develops on potatoes when planted on too recently manured land. Send a soil sample to Agricultural Experiment Station, University of California, Berkeley, and ask them to tell you which element of fertility is most needed and be guided by that in your choice of fertilizer. You may have plenty of everything but phosphorus. Then apply some of the most available phosphorus fertilizers for your fall crop. If you do nothing else, alfalfa sod and manure as suggested will help. A readily available commercial fertilizer should be applied at planting time.—W. S. G.

Dexter Cattle.

Regarding an inquiry as to Dexter cattle in this state we have the following from Professor Gordon H. True

Farmers, Attention!

WANTED: Location for seven $150,000.00 Condensed Milk Plants and twelve $115,000.00 Milk, Flour and Sugar Plants. We sell no stock or bonds, nor ask for free site. Show us you have natural surroundings to develop into dairy country if milk prices are such to make it possible to do so at a profit. Send full information of your advantages, pictures of farms, publications, books, etc., to

Herman R. Franzen
Ephrata, Lancaster Co., Pennsylvania

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Equipped with Vine Separator

A Superior Machine

Does the Best Grade of Work

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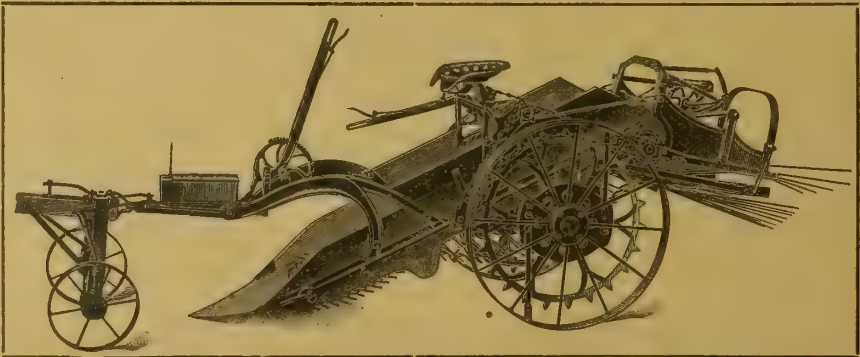

334 Hoover Potato Digger

The Hoover Potato Digger is a well constructed machine that will do good work under adverse conditions. Main frame bar is made of best quality gray iron castings with the axle and shovel bolted thereto.

High grade crucible steel shovel.

Beams are made of best charcoal malleable castings and bolt solid to the main frame. Hoover Diggers give the best results. Most popular digger in potato growing sections. Ask your John Deere dealer about this Digger, or write to us for particulars.

John Deere Plow Company, San Francisco, Cal.

of the university farm at Davis: "Relative to Dexter cattle, in so far as I know, there are no herds of this breed in the state. In fact I know of none anywhere in the west and I am of the opinion that the few herds in this country are in the eastern states. These cattle weigh from 600 pounds to 700 pounds, as you know, and are hardly adapted to any other use than that of family cows. The average yield of milk is said to be about three gallons a day, producing six or seven pounds of butter fat a week." The native home of the Kerry or Dexter is western Ireland among the Kerry Islands. Plumb, in Types and Breeds of Farm Animals, says: "The true Kerry is a small breed of dairy cattle. The color is black, though red sometimes occurs. White may occur about the udder or scrotum, but is not desirable. The lean head carries upstanding slender white horns with black tips. With cows the neck is slender and long, the body of moderate proportions, the legs fine and long, and the udder large with medium-sized teats. In size this is one of the small breeds; the cows often weigh from 500 to 600 pounds, and frequently do not exceed 40 inches high. The bulls are larger, weighing 800 to 1000 pounds. The Dexter-Kerry is of unknown cross. Some authorities think that a Mr. Dexter nearly a century ago developed the breed by crossing Kerries on other stock. Some others regard it as a result of selection. This type is more blocky, shorter legged, heavier of head and neck, and more beefy in type than the true Kerry, and, as seen by the author, much smaller. The color also is variable, being black, red, or roan. There are wider variations among the Dexter-Kerry branch than in the true Kerry. In each case the udder is unusually well developed, showing large capacity in proportion to size of body."

Giant Dolichos

I send leaf and flower from vine. What is its name? Is it of any use except as an ornamental? It grows rapidly and the flowers are formed in large clusters. It is not common here. No one seems to know its name.—Subscriber, San Diego.

This is Dolichos lablab, variety purpurea, sometimes called hyacinth bean. It is a tropical twining bean, one of many forms of the same family. We have never heard of its being of any value other than as an ornamental. In mild seasons it will live through the winter, but generally has to be planted each spring.

Settle This Water Question Now!

When you install a Krogh Pump you have permanently settled the question of a dependable water supply. No matter what depth your wells may be, there is a Krogh Pump exactly suited to your needs. We would like to counsel with you—advise you regarding your equipment. Our complete engineering staff is at your disposal. Booklets: 85B about Turbines—78B about Verticals and Horizontals—are free.

Krogh Mfg. Co.
Los Angeles San Francisco

Veterinary

Answers in this column by Dr. Wm. Petrie, 2714 South Harvard Blvd., Los Angeles, are without charge. For immediate mail answer remit $1.00. In writing questions give full symptoms or particulars of injury of animal.

Obstructed Milk Duct.

Have a cow just fresh, but can get no milk out of one quarter. There seems to be plenty of milk there, but it will not come out. The cow has good appetite and no fever. Her udder was always in good shape. There are no signs of any bruise or hurt. This is her second calf. Is there anything that will start the flow of milk?—Subscriber, Woodland.

There is an obstruction in the teat that has closed the duct. We do not know why but sometimes while a cow is dry a small lump or tumor grows in a teat and closes the duct. The tumor may be in any part of the duct, but the nearer the end of the teat the easier it is to treat. First use a milk-tube and push it through the obstruction. This will allow the milk to flow through the tube, but will afford only temporary relief as the opening through the tumor will close again so you would have to introduce the tube every time you milk the cow. Every veterinarian should have a small instrument for removing such tumors. It is about the size of a milk tube and has a small blade concealed in it that can be pushed out and used to cut the tumor while the instrument is in the teat. Once the tumor is cut out there is seldom any further trouble. Nature provides for the absorption of the milk and she will go on all right if not treated, but you will lose that amount of milk.

Sick Cow.

Have a Jersey cow ten years old, fresh about three months. Two weeks ago she suddenly became stiff. The symptoms were no milk, short breathing as if in pain and she appeared to have a swelling or obstruction in the throat. Thought she was choked on a cabbage stump as she had had access to the cabbage patch. Inserted a piece of hose with some difficulty but could not tell whether we forced anything down or not. The cow refused to eat for about four days, but now is eating and drinking very well but can not raise a cud. She will go through the motions but nothing will come up. She has alfalfa pasture and grain, but licks dirt and chews dry willow branches and leaves. Have given her salts and salt and the bowels and kidneys seem natural. There is evidently something wrong beside the throat trouble and she craves something. What is wrong and what can we do for her?—Subscriber, Rio Bravo.

You have given a good description of the symptoms that we find when a cow has swallowed a piece of wire and it has punctured the stomach and gone through into the lungs. Cows will sometimes pick up a rag or piece of twine that may be attached to a wire and chew and swallow the whole thing. Of course that does not happen often, but quite a number of such cases are on record with the symptoms that you describe. In time, if it is a wire, it may puncture some of the vital organs and cause death. The only advice we can give is to give a pint of raw linseed oil once a day to keep the stomach and bowels active.

A NATIVE

Regarding coccus citricola, on which there has been given considerable information, and otherwise, Mr. William Phillipson of Monrovia believes that this insect is a native of this state. He says that he has seen it in many canyons of Southern California and knows that it thrives on native trees and shrubs.

MONEY MAKING LITTLE LINERS

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New 1000 gal. galzanized tanks, $19.50; 2000, $29.50; 8 ft. windmills, $19.50; 10 ft., $29.50; 12 ft. $45.00.

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Potato diggers, planters, cutters, cultivators, harrows, plows, Holt tractor, sprayers, sundries.

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8 H. P. Stearns, $135.00; 20 H. P. Stearns, $195.00; 28 Lambert, $295.00; 35, $350.00; Ames double acting, deep well pump, $135.00; single acting pumps, $20.00 to $60.00. Centrifugal pumps half price.

SUNDRIES

Bankrupt sale new stocks and dies half price; gears, large pipe fittings, pulleys, belt.
Demmitt Co., upstairs, 120 N. Main, Los Angeles.

We have pumps, motors and engines of all sizes and for all conditions, which we will sell or rent. If you want a complete plant or any part, write us your needs and get our prices. Can give you special low price on engine and automobile oil, also belting. Machinery & Motor Exchange, 733-735 San Fernando street, 732-734 New High street, Los Angeles, Cal. Main 6382.

Bargains for Dairymen—We have a number of used Cream Separators as good as new that we are offering at bargain prices. We also carry the famous Primus Separator. Chilly King Cooler and a full line of up-to-date dairy supplies and machinery. Write us for money saving particulars. Sanitary Dairy Supply Co., 246 S. Central Ave., Los Angeles.

For Sale—Used and new gas engines, 2 H.p. up, rebuilt and fitted with modern equipment. 22 years' experience enables us to repair and rebuild gas engines correctly. Get our prices. Lloyd, 806 N. Main, Los Angeles.

For Sale—Gas tractor, 4 cylinder, 7½-inch diameter, 8-inch stroke, will do the work of 32 horses. Good as new. Address C. H. Jensen, 502 E. Weber Ave., Stockton, Cal.

Electric Motors—We repair, buy, sell and exchange. New and second-hand. Motor Shop, 553 Maple Ave., Los Angeles, Phone 14516.

LIVE STOCK

Ohio Improved Chester White (O. I. C.)—Four boars, March farrow left; 8 sows, June farrow, ready next month. Selected sows bred for October farrow; pigs ready to ship December 1st. Three herd boars in use. All stock cholera immune. Booking orders now. Crated and registered free. C. B. Cunningham, Mills, Sacramento County, Cal.

Grape Wild Farm Thoroughbreds—Guernsey Bulls of A. R. Breeding. BERKSHIRE HOGS. Finest herd in the state. All ages for sale. A. B. Humphrey, proprietor, Mayhews, Sacramento Co., California.

Thoroughbred Berkshire Boars of all ages from developed and large-boned hogs. Riccomi Bros., Mountain View, Cal.

Glenview Poland China—Stock for sale. Chas. R Hanna, R. F. D. No. 3, Riverside, Cal.

N. H. Locke Co., Lockeford, Cal.—Choice young Jersey bulls for sale.

TREES.

For Sale—One and two-year-old Washington Navels and Valencia Orange Trees. Eureka Lemons and Marsh seedless grapefruit, for Spring 1914 delivery. Write for prices, or call and examine stock at Morris Citrus Nurseries, Cor. Juanita and Valley Center, R. F. D., Box 34, San Dimas, Cal.

Now Is the Time to book your order for fig trees. "My specialty." 25,000. Seventeen varieties, extra fine, well rooted, straight and branched, one and two year old trees. Price list on application. C. C. Terbush, R. 2, Box 543, San Gabriel, Cal.

For Sale—50,000 Sour Orange seed bed stock, finest quality, or will let to responsible party on percentage basis; also 2000 A1 late Valencias, two years old next spring, or might exchange for Washington navels. H. H. Eshelman, Soldiers' Home, Cal.

For Sale—A block of 3000 Valencias, 1000 navel and 1500 lemon trees, grown between orchard rows and must be moved at once. Prices right for quick deal. Also have budded and seedling Avocados. Smith-Roberts Nurseries, Tustin, Cal.

The 1200-Acre Nursery, growers of 1500 varieties of trees and plants. OREGON NURSERY CO., Orenco, Oregon. Sales office, 522 Chamber Commerce, Los Angeles, Cal.

1000 Avocado Seedlings—Pots, also can furnish nice plants, bare root, at low price. A. A. Quint, R. D. No. 2, Pasadena, Cal.

For Sale—Eureka Walnut Trees, budded on Native Black Walnuts. Choice stock. Order immediately. Don't delay. Wm. Holve, Fullerton, Cal.

Citrus Nurseries, Murphy Oil Company, East Whittier, California. Selected stock for sale; inspection invited.

You Future Nurserymen—Write for prices on special stocks of plants to start business with. Ballou's Nursery, Pasadena, Cal.

Budded Citrus Trees and seedlings at fair prices. Will take auto or land. J. P. Butler, Jr., P. O. Box 145, Lamanda Park, Cal.

SEEDS AND PLANTS

Grow Sudan Grass — The new forage crop — endures drouth, yields heavy, excellent in feeding value. Plants rogued and seed personally inspected by experiment station officials. The supply this year is limited. Seed one dollar per pound. B. D. Short, Rhome, Tex.

For Sale—Bargain—Burbank's Spineless Cactus, Sonoma, Monterey, Santa Rosa, Fresno; special forage; market, 10 cents plant, any quantity, delivered anywhere. Two weeks only. Alhambra Cactus Nursery, Route 8, Box 948, Los Angeles.

Burbank Spineless Cactus—Robusta, Special and Columbia for forage; Eldorado, Banana, Royal, Sugar, Niagara, Green Fruit, Red Fruit and Opaline for fruit. Write for description and prices. J. T. Green, Box 63, Morgan Hill, Cal.

For Sale—Avocado Seeds (Alligator Pear) at $4.00 a 100; $35.00 a 1000. I also have to offer a few small yearling Avocado trees at $10.00 a 100. J. B. Wagner, Nurseryman, Pasadena, Cal.

$ $ $ $pinele$$ Cactu$—All varieties Burbank's fruiting and forage plants, 10c up. Plant now. Booklet free. Wonderful new Giant Rhubarb. Black Bros.' Nursery, 455 Lucas, Los Angeles $ $ $ $ $ $ $ $ $

Alligator Pear Plants—Choice Avocado seedlings from Mexican highlands, two to three feet high. J. C. Bosche, 127 South Benton Way, Los Angeles, Cal., Phone 51208.

Thornless Cactus Slabs for sale at 5 to 15 cents each. Chas. R. Hanna, R. D. No. 3, Riverside, Cal.

RABBITS

New Zealand Reds, prize stock, young for sale; buy now and raise for the winter shows. Mrs. C. A Richey, R. F. D. 8, Box 557, Los Angeles.

BEES

It pays to keep bees on the farm, raise your own honey, make considerable profit besides. We can supply gentle Italian bees at 3.50 for five frame colony five dollars for ten frames, and ship anywhere by express. Write for our free price list of bees, instruction books, etc. Spencer Apiaries Co., Box 14 Nordhoff, Cal.

FARM LANDS FOR SALE.

For Sale—[illegible] acres of land 40 miles from Los Angeles, Southern Pacific R R crosses a portion of the land; 150 acres under fence, 80 acres in crop this year, 10 acres in alfalfa; can cut from five to seven crops of alfalfa per year and will average better than one ton to the acre for each cutting, have had plenty of water on the surface up to the present time, and I have a good pumping plant that will furnish plenty of water at all times, have three good wells, house, barn and other out buildings. I will sell all or a part $25 per acre and up; one-half cash, balance 8 per cent for any reasonable time. Address J. E. Youngblood, Lang, Cal.

VICTORIA, AUSTRALIA, WANTS SETTLERS

Special inducements, government land, railways; free schools; cheap irrigation. 31 years to pay for farms adapted to alfalfa, corn, grains, fruit, etc.; climate like California, ample markets, reduced passages, special excursion next November. Free particulars from F. T. A. FRICKE, Government Representative from Victoria, 687 Market St., San Francisco, Cal., Box X.

For Sale—Better Than Lease—160 to 1600 acres of fine sub-irrigated river bottom land suitable for beets, beans, rice, grain and vegetables. Near large city. Good markets and cheap transportation. Will sell for $200.00 per acre, 5 per cent cash and 5 per cent each year until principal is fully paid. C. H. Barrow, 111 So. Broadway, Los Angeles, Cal.

For Sale—Best paying alfalfa ranch in the beautiful Santa Clara Valley, one-half mile from R. R. station 18 acres alfalfa, 2 acres family orchard; beautiful residence, outhouses and irrigating plant. Address W. Kiely, Lawrence, Cal.

For Sale—Ten acres, fruit ranch, trees two and four years old; seven acres of apples and three acres peaches, cherries, pears, plums. Price $6,000, half cash, balance on time at 6 per cent. F. W. Duncombe, R. F. D. 1, Beaumont, Cal.

For Sale—160 acres unimproved land 3 miles from Anderson. Some timber and underbrush. Can be irrigated from canal. Red clay loam, suitable for olives and fruits. Price $12.00 per acre. Anderson Realty Co., Anderson, California.

Apple Orchards—Large and small, in the only apple producing section in California. The greatest section west of Missouri River. Write for booklet. Geo. W. Sill & Co., Watsonville, Cal.

Farmlands for Sale—Read our advertisement on page 149. I have what you are looking for in farm lands. G. M. Rea.

Ranches, homes, acres, lots, exchange; send for free list. Wilson Bros., Santa Cruz.

POULTRY

CROLEY'S POULTRY CONDITION POWDER

is a wonderful help during the molt.

Try some. Your dealer has it.

How to Make Money—Mrs. A. Basley's latest Poultry Book is without exception the best ever written. The secret of how to raise every turkey hatched and the "Basley Formulas," now published for the first time, are worth many times the price of the book. The "Western Poultry Book" is a practical book by a practical woman. Price $1. Order from Cultivator Publishing Co.

For Sale or Exchange—Wanted, 100 pullets, Plymouth Rocks, R. I. Reds or Orpingtons, to feed my Burbank Spineless cactus to. You want the cactus, I want the chicks. 50c slabs for 50c pullets. Address or ship to H. L. Bauers Cactus Ranch, 4401 Hummell St., Los Angeles, Cal.

Poultry Wanted—We pay the highest market price for all the local poultry we can get, no matter how large the quantity; also fresh ranch eggs. We remit immediately. National Poultry Co., successors to Allaway & Layton Co., 607 E. Third St., Los Angeles, Cal.

Barred Rock Cockerels (Hawkins' Royal Blue Strain) ready for fall mating. All the popular breeds of baby chicks every week after Aug. 15th. Order early and avoid the rush. Enoch Crews, R. 1, Santa Cruz, Cal.

Barred Rock and R. I. Red baby chicks. If you want to raise some broilers send me your order. Price $10.50 per 100 until September 15th. J. W. Lyon, Gardena, Cal.

Barred Plymouth Rocks — "None better." Special prices for May and June. Write for 'em. C. H. Vodden, Los Gatos, Cal.

MISCELLANEOUS.

For Lease—Dairy ranch, 160 acres; 85 alfalfa, 35 grain, balance pasture with shade and firewood. Alfalfa and grain land all leveled and ditched, using wooden gates in ditches, also using 2200 feet 14-inch cement pipes. Ten H. P. motor, centrifugal pump, reservoir. Good six-room house, two sleeping porches, electric light, water piped. Tank house, garage, horse barn, and will build milking barn. Located six miles from Wasco, seven from McFarland, two from Elmo, 11 from Delano, Kern county. $1800 per year, tenant to pay power. Furnish references and security. W. F. Marks, 226 South Main St., Los Angeles, Cal.

Free for Six Months—My special offer to introduce my magazine "INVESTING FOR PROFIT." It is worth $10 a copy to anyone who has been getting poorer while the rich, richer. It demonstrates the REAL earning power of money, and shows how anyone, no matter how poor, CAN acquire riches. INVESTING FOR PROFIT is the only progressive financial journal published. It shows how $100 grows to $2200. Write NOW and I'll send it six months free. H. L. Barber, 430, 28 W. Jackson Blvd., Chicago.

A SOLAR FOOD CONSERVER

This inexpensive appliance intensifies the heat of the sun and uses it to sterilize and preserve fresh in every way, and to cure all kinds of deciduous fruits and vegetables. This invention opens a new home industry for making crystallized fruit confection for sale. Purchasers report having sold as high as $75.00 per month in this way. Write for prices and particulars to E. E. Dow & Co., Redlands, Cal.

FOR SALE
Perfectly equipped
propagating plant,
fine opening for an
all round man. Plenty
of deciduous and olive
budding.
Box 63, Rialto, Cal.

"Smith's Pay the Freight"—To reduce the high cost of living, send for our Wholesale to Consumer Catalogue. Smith's Cash Store, 112 Clay St., San Francisco.

WANTED.

Wanted—Steady position by expert in pruning and new style budding and grafting; any kind of trees or roses. Work guaranteed. Mike Detore, 138 South Los Angeles St., Los Angeles, Cal.

Wanted—Practical, scientific citrus man wants charge of grove; 10 years' California experience. Also understands general farming. Married; no children. Address Box C, Cultivator Office.

HORTICULTURAL PRINTING

Catalogues for the seed and nursery trade. The live stock and poultry industries are a specialty with us. Two thousand illustrations to select from. Write for prices and samples. The Kruckeberg Press, 237 Franklin St., Los Angeles.

Household Department

THE THINKER

Back of the beating hammer,
  By which the steel is wrought,
Back of the workshop's clamor,
  The seeker may find the Thought.
The Thought that is ever master
  Of iron and steam and steel,
That rises above disaster,
  And tramples it under heel!

The drudge may fret and tinker
  Or labor with dusty blows,
But back of him stands the Thinker,
  The clear-eyed man who Knows;
For into each plow or saber
  Each piece and part and whole,
Must go to the Brains of Labor
  Which gives the work a soul!

Back of the motor's humming,
  Back of the belts that sing,
Back of the hammer's drumming,
  Back of the cranes that swing,
There is the eye which scans them,
  Watching through stress and strain,
There is the Mind which plans them—
  Back of the Brawn, the Brain.

Might of the roaring boiler,
  Force of the engine's thrust,
Strength of the sweating toiler,
  Greatly in these we trust.
But back of them stands the Schemer,
  The Thinker who drives them through,
Back of the Job—the Dreamer
  Who's making the dream come true!
—Berton Braley, in the American Magazine.

NEIGHBORS

(Concluded from last week.)

There was Bogue, who to his own journeys to town cheerfully added two more trips a week with his neighbor's vegetables and fruit; all the little Bogues, who helped pick them; Lacy, who got in the hay; Jenkins, who weeded and cared for the vegetable-garden till it was too dark to see; and Hudson, who looked out for the chickens, turkeys and geese, There was no one who did not willingly give his time and labor.

In the kitchen the wives held sway; they attended to the washing and cooking, and saw that the strength of the nurse did not give out. For the nursing devolved on the wife alone. All the helpers had asked that Silas should not be told, and Henrietta Green recognized the wisdom of the request. She toiled through the days and nights as best she could, and snatched a little rest only when her querulous patient slept.

But there came a day when the sick man needed the attendance of others besides herself; when the eyes of Silas rested unseeingly on the face of his wife; when her strength was as that of a child, opposed to his delirious struggles. Then the men came in pairs, and relieved one another in turn, so that none should feel the burden of the work too heavily.

Those were dark days; days of fear and prayer; days when Henrietta feared for the night to fall; nights when she dreaded for the day to dawn; days when the eyes of the doctor would not meet her own; days when he came four or five times; one fearsome night when he kept watch beside her. She went through it all in tearless agony. But the next morning, when he drew her outside the door, and whispered in her ear, "Henrietta, he'll pull through now," it was more than she could bear. and she wept out her relief and joy on Mary Johnson's bosom.

Then came the days of convalescence—by no means the easiest time for Henrietta. But she threw herself into the task of cheering and coaxing her patient. She laughed and cajoled his restlessness away. She humored him as she would have humored a sick baby.

Gradually, as he became stronger, his neglected work began to trouble him.

"When will the doctor let me get up, Henrietta?" he would say. "And when'll he let me eat?" I'm so hungry I believe I could eat a house. I never want to see milk again; I want beefsteak and onions, and ham and eggs—that kind of thing. I'm pining for 'em. And I want to be up so! There's the hay—it'll be a dead loss. How long is he going to keep me here? Can I get up tomorrow I'm so hungry—"

Mrs. Green never lost patience. She evaded his questions, and did her best to soothe him. It was a proud day for both when the doctor let him get up. He was only a shadow of himself. He looked long at his thin, white hands.

"If I can't farm, Henrietta, I allow I can get a place in the circus as the living skeleton soon," he said.

His wife's old, cheery laugh rang out. He looked at her, and for the first time saw the change in her. There were lines that anxiety had traced in her comely face; the weeks of confinement had made her pale; but her lassitude was gone. Her eyes were bright, her step was quick and eager; it was as if the joy of living encompassed her once more. As Silas watched her, his heart swelled with gratitude and love.

Slowly, as he shook off the enfeebling effects of his illness, his mind became more alert, and he noticed her constant evasion of questions about the work. He was aware that the shade of the southeast window, which looked out on the garden and a grain-field, was always pulled down. Craftily he tried to find out the reason for it.

"Did the doctor say I was to get well without any sun?" he asked.

"Now, Silas, the sun just streams in the other window in the afternoon. Don't be hankering after the morning sun, too. You ain't strong yet."

He let the subject drop for the time, and she breathed easily again. Dreading the effect that the sight of the workers might have upon him, she never left him alone longer than a few minutes.

But one day Mary Johnson went home without a receipt-book that she had asked for. "And she wants to get those plums put up right away." Mrs. Green said to herself. "She's behind with everything. I believe I'll give Silas a real entertaining book, and run over there. 'Twon't take long, and I haven't been out of the house for months."

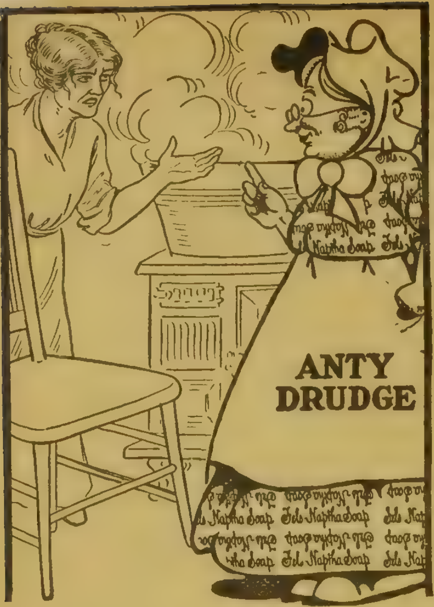
Before she went, she made him promise not to pull up the shade, although at the moment no one was working in the fields. She did not observe that his eyes failed to meet hers, and that the promise about the shade was the only one he gave.

She had not been gone long before Silas had searched in the closet and found an old cane. Leaning on it, he took his first feeble steps away from the sick-room.

"I'm bound to see," he said to himself. "Of course everything's about ruined, but I believe it hurts me worse not to know than it would to know."

Yet eager as he had been to see, he found it hard to turn his eyes toward the desolation that he felt sure was there. When at last he did look, he saw with surprise that there was no desolation. The thrifty vegetables, in all stages of growth, appeared as well cared for as they were when he had been taken ill. Everything looked the same. He drew his hand across his puzzled eyes. It was as if only a night's sleep had lain between him and his garden. But when he looked for the waving, golden grain, the weeks of illness loomed up again. There was no grain to be seen.

He turned his tottering steps toward the barn. The short walk was tiring him; the strangeness of the situation lay like a cloud upon his mind. But at the door of the barn the cloud cleared, and the solution of the puzzle was before him. James Johnson, whistling gaily, was milking the brindle cow. The two men saw each other at almost the same moment. Silas leaned against a feedbox and spoke sharply:



Mrs. Peevish—"I declare, I'm ashamed to ask you into this smelly place, Anty Drudge, but you know how it is on washday, with boiling clothes filling the room with steam. I'm just sick with the odor, and I'm about ready to give up."

Anty Drudge—"I think it's time you did give up your old-fashioned notions. Nobody up to date boils their clothes these days. They use Fels-Naptha Soap in cool or lukewarm water. There's no chance for disagreeable smell then. The only smell to Fels-Naptha is clean smell."

When you wash with Fels-Naptha Soap and cool or lukewarm water, you don't breathe in sudsy steam, nor fill your house with the smell of boiling clothes—and you get your work done easier, better and in half the time than ever before.

Fels-Naptha dissolves grease and makes dirt and stains vanish. It's just as good for all kinds of housework as it is for washing clothes.

Buy it by the box or carton and follow the easy directions on the Red and Green Wrapper.

Fels & Co., Philadelphia.

DRINK "QUALITY" TEA and COFFEE

From IMPORTER to CONSUMER direct by PARCEL POST

"CHA-MA" . . . . 60 CENTS A LB.
A FAMOUS GREEN UNCOLORED JAPAN TEA
"NIN-GAR BLEND" . . 50 CENTS A LB.
A DELICIOUS BLACK ENGLISH BREAKFAST TEA
"SEE LOE BLEND" . . 75 CENTS A LB.
OF THE CHOICEST BLACK TEAS IN THE WORLD
PACKED ONLY IN 1-LB., ABSOLUTELY AIR-TIGHT TINS
"E-CIL-A BLEND" . 1 LB. 40C; 3 LB. $1.00
A CHOICE BLEND OF PURE COFFEE
Packed in Air-Tight Packages
ALL POSTAGE PAID BY US. MAIL ORDERS TO

THE WM. J. SCHROTH CO.

112-B MARKET STREET, SAN FRANCISCO, CAL.

SAVE ONE THIRD on Table Linen, Bed Linen, Bedding of Excellent Quality

$30 worth of merchandise for $20.

Here is the List:

	Usual Value
1 pr. Blankets	$ 6.00
1 Comfort	3.00
1 Bed Spread	2.50
1 doz. Towels	1.80
½ doz. Bath Towels	1.50
2 yds. Table Cloth	3.00
1 doz. Napkins	3.00
1 doz. Twill Dish Towels	1.00
1 Rag Rug, 27x54	1.50
2 18x54 Dresser Scarfs	1.00
6 Sheets	4.50
6 Pillow Cases	1.20
Total Retail Value	$30.00

$20 brings this splendid list of goods to you, express or freight prepaid by us. We guarantee every article to be as represented and usually sold at above prices. You save one-third. If you don't want whole list, select what you wish, and deduct 25% from listed price. Express charges paid on all orders of $5 or over. Your money will be refunded if not entirely satisfied.

JOHN McDERMOTT & SONS

Largest Mail Order Dry Goods House on the Coast.

111-13-15 Winston Street,
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References: German-American Trust and Savings Bank, R. G. Dun & Co. and Bradstreets.

We Employ NO Agents FREE Big Fall Style BOOK 70 Liberal Samples

Of course you are going to have a new fall suit—but why pay $20 to $30 for merely ordinary ready made garments when you can get a classy

Made-to-measure, all-wool BLUE SERGE SUIT for $15

the greatest value ever offered in a high-grade blue serge suit, tailored to your individual measure for only $15.

We Guarantee to Please You in tailoring, materials, fit and style or you don't pay us one cent. To get your business we are going to line the first suit with a regular

$4 SATIN LINING FREE

Send today for our big book with 70 liberal samples plain and fancy woolens, new fall styles all FREE. Through our special tailoring system and by selling direct—through no agents, stores or dealers—we are able to give values that absolutely cannot be duplicated.

We will save you BIG MONEY

BERNARD, HEWITT & CO., Tailors,
564 West Monroe Street, Desk 378 Chicago, Ill.

"Will ye tell me how ye come to come on my property?"

The intruder looked embarrassed.

"Why—why—" he faltered, "I allowed you needed me. And I didn't think you'd know."

"So when a man's down," Silas said, "and can't help himself, you come sneaking in—"

James Johnson interrupted him. "Mis' Green knew," he said.

"Sneakin' in," went on Silas, as if the other had not spoken, "doing the work of the man who—who talked to you hasty, who you haven't no call to do it for—who—who—who's plum ashamed," he concluded, putting his old hands over his face like a hurt child. "I didn't think, Jim, you'd go to — make me — feel — as mean — as this."

"Why, neighbors are neighbors," said James Johnson. "What we owe to 'em's plain as day. 'Twasn't only me — we've all been over — Hudson and Lacy—Jenkins and Bogue. We did what we could—we were glad to. 'Twasn't anything, anyhow. Any one's willing to help. You tried to help me, but I was too pig-headed to listen."

The old belligerent light gleamed in the wet eyes of Silas Green.

"I surely did," he began. "You'll never have a crop till you do as I say, and—"

"I know!" interrupted the other. "I'll change and get rid of the black spots this year."

"So'll I," said Silas Green, reaching out a hand as if to seal a bargain.

"Why, you haven't got any!"

"Yes, I have, Jim. You showed 'em to me. But they're on me, not on the fruit. They're deep set. They'll be hard to get rid of. But it's got to be done. It's no more'n a man owes to his neighbors."—Youth' Companion.

IDEAS FOR THE COOK

Written for the California Cultivator
By Isabel Cottle

Breakfast

Chilled Cantaloupe
Eggs with Rice
French Toast, Strawberry Jam
Coffee

Lunch

Cream of Pea Soup
Potato-Pimiento Salad
Sliced Cold Ham
Graham Rolls Baked Peaches
Tea or Milk

Dinner

French Lamb Chops Peas in Cream
Mashed Potatoes, Browned
Cucumber, Lettuce and Onion Salad
Frozen Peaches
Baby Baltimore Cakes
Coffee

Strawberry Jam.

Take equal quantities of berries and sugar. Dissolve sugar in hot water and boil until it will spin a thread. Pour boiling water over the berries, let stand for a few minutes, skim out and place in jars or glasses. Fill jars with boiling syrup and cover with paraffine. If liked a few drops of lemon juice may be added to the syrup.

Baked Eggs With Rice.

Soak rice over night, put into briskly boiling salted water, boil 15 minutes covered, then remove cover and let dry out. When tender and dry (it may be necessary to pour off some of the water) take out, place in individual baking dishes and drop an egg in the center of each nest of rice. Pour over a spoonful of cream and set in hot oven until the eggs are set.

Potato and Pimiento Salad.

Take four medium sized boiled potatoes, two hard-boiled eggs, one-half can pimientos, one tablespoon chopped pickle, some chives and one teaspoon salt. Boil and slice potatoes, add chopped pickles, eggs and pimientos. For the dressing mash yolks of two hard-boiled eggs, a pinch of mustard and a little salt. Mix smooth with vinegar, then add cream to make the desired quantity, adding a little more vinegar at the last if not sour enough.

Baby Baltimore Cakes.

Beat one-fourth cup butter to a cream, gradually beat in half a cup of granulated sugar, the beaten yolks of four eggs, one-fourth cup of milk, the grated rind of one orange, or half teaspoon orange extract. Lastly add one cup sifted flour, less two tablespoons sifted again with two tablespoons baking powder. Bake in a well buttered pan 15 to 20 minutes.

Icing.

Dry six macaroons in a warming oven, roll and sift. Melt one and a half cups of sugar and a pinch of baking powder in half a cup of boiling water, let boil until a long thread will spin from the spoon. Beat whites of two eggs, pour on the syrup slowly in a fine stream, beating constantly. Tint a delicate rose color, flavor with half a teaspoon vanilla and a few drops of almond extract, mix with the macaroon crumbs and frost cake.

TO CURE FACIAL BLEMISHES.

We often see an otherwise good complexion marred by acne or blackheads, though it is said that if the face is washed as it should be no blackheads would appear, and with no blackheads there would be no enlarged pores. The face is made of tiny little pores, each one a tiny opening which would not ordinarily show, and unless the face is kept absolutely clean the dirt gets into these tiny openings and increases in amount until the pores are enlarged and the blackheads formed.

Pimples are another result of enlarged pores, as the dirt and foreign substances in them cause the pores to become inflamed and these become pimples. Hard water should not be used for face washing. The mineral deposits in it harden the epidermis and render acne almost ineradicable. After a long trip in the dust the accumulated dust on the face should first be removed by a simple cold cream, and only pure refined soap should be used on the face. A face cream at night and a soft bathing every day in water made milky with tincture of benzoin will improve the worst complexion, and an excellent remedy for enlarged pores is made with one dram of boric powder dissolved in four ounces of distilled witch hazel. For greasy or shiny skin use equal parts of boric powder and chalk as a face powder. With care flabby cheeks can be made firm and round by the constant feeding of the pores and rubbing upward. Thick sweet cream makes a fine skin food, and pure, fresh goose grease or poultry fat of any sort, with a little spirits of camphor added, is a good and safe skin food.

The juice of green grapes is said to remove freckles, also tansy leaves soaked in buttermilk over night. Most acids will remove freckles for a time; too much acid on the skin is liable to make wrinkles, while a little is beneficial.

An excellent lotion for removing blackheads consists of boric powder one dram, alcohol one ounce and rosewater two ounces. This must be applied with a soft cloth and allowed to dry on the skin. To remove pimples, wash the face at night with castile soap and warm water, then use a lotion made by dissolving one teaspoon of boric powder in a cup of boiling water and this must be used night and morning. Some things that are used for removing facial blemishes are very injurious to the eyes, but there is nothing better for the eyes or the complexion than this boric solution. It is good for rashes and all irritations of the skin, and you can cure a blemish and get rid of a mole or liver spot once for all by devoting a little time to giving them the right treatment once or twice a day.—M.A.H.

Books

This list of helpful, instructive and interesting books is prepared by us with the purpose of enabling the Cultivator readers to supply themselves at the lowest possible cost. The great value of many of these is so well known as to need no comment from us. Some of the new books which we have added to the list this year deserve special mention. "Co-Operation in Agriculture," by G. Harold Powell, should be in the hands of every producer of farm products. "Farm Sewage," by Santee, will aid many in solving a perplexing problem. "Farm Manures," by Thorne, is decidedly valuable. We state sincerely that no orchardist can afford to get along without "The Pruning Book," by Bailey. We have had much inquiry for a book on keeping farm accounts—we can supply a good one now. The imported book, "Insecticides, Fungicides and Weedkillers," by Bourcart, is a marvel of completeness. The rapidly increasing use of gasoline engines, automobiles and tractors by the farmers has demanded reliable treatises on these subjects. "The Gasoline Engine on the Farm," by Putnam, "The Modern Gasoline Automobile," by Page, and "Traction Farming and Traction Engineering" are exceptionally complete, well illustrated and easily understood. Don't overlook the "Cement Workers' Handbook"—it's "worth its weight in gold." Every book on this list has the endorsement of the California Cultivator.

	Book Alone.	With Cultivator.	Free for the following number of new Subscribers.
American Grape Growing, by Hussman	$ 1.50	$ 2.25	3
Arid Agriculture, by Buffum	1.50	2.35	3
Book of Alfalfa, by Coburn	2.00	2.75	4
California Soils, by Prof. Gilbert E. Bailey	1.50	2.20	3
Cyclopedia of Agriculture, by Bailey	20.00	20.00	40
Cement Worker's Handbook	.50	1.30	1
Citrus Fruits and Their Culture, by Hume	2.50	3.25	5
Co-operation in Agriculture, by Powell	1.50	2.40	3
Domestic Water Supplies on the Farm, Fuller	1.50	2.30	3
Date Growing, by Popenoe	2.16	2.85	4
Feeds and Feeding, by Henry	2.25	3.00	5
Farm and Garden Rule Book, by Bailey	2.17	2.90	4
Farm Sewage, by Santee	.50	1.40	1
Field Manual for Beet Sugar Growers, Adams	1.00	1.85	2
Fruit Growing in Arid Regions, by Paddock	1.50	2.40	3
Farm Manures, by Thorne	1.50	2.25	3
Farm Friends and Farm Foes	.90	1.85	2
Farmers of Forty Centuries, by King	2.15	2.95	4
Fertilizers, Source, Purchase and Use (Smith)	1.00	1.90	2
Garden Helps, by Hall	.75	1.65	2
Gasoline Engine on the Farm, by Putnam	2.00	2.60	4
Garden Book of California (Ornamental) by Angier	2.00	2.85	4
How to Keep Farm Accounts	1.00	1.75	2
Hand Book for Farmers and Dairymen, by Woll	1.50	2.30	3
Irrigation and Drainage, by King	1.50	2.40	3
Insecticides, Fungicides and Weed-killers	4.50	4.75	9
Modern Gasoline Automobile, by Page	2.50	3.10	5
Milk and Its Products, by Wing	1.50	2.40	3
Making the Farm Pay, by Bowsfield	1.15	1.95	2
Nursery Book, by Bailey	1.50	2.40	3
Practical Garden Book, by Bailey and Hunn	1.00	1.90	2
Primer of Irrigation, by Anderson (paper cover)	1.00	1.85	2
Pruning Book, by Bailey	1.50	2.40	3
Story of the Soil, by Hopkins	1.50	2.35	3
Soils, by Hilgard	4.00	4.75	9
Swine in America, by Coburn	2.50	3.25	5
Traction Farming and Traction Engineering	1.65	2.25	3
Science and Practice of Cheese Making	1.75	2.50	4
Soil Fertility and Permanent Agriculture, Hopkins	2.70	3.50	6
POULTRY, ETC.			
Built and Used by Poultrymen (excellent)	.50	1.25	1
Belgian Hare Guide	.25	1.20	1
Ducks and Geese	.75	1.65	2
Leghorns, All Varieties	1.00	1.85	2
Minorcas—Every Comb and Color	.50	1.45	1
Practical Rabbit Keeping	1.25	2.10	2
Perfected Poultry of America	2.50	3.00	5
Poultry Houses and Fixtures	.50	1.40	1
Pigeons—All About Them	1.00	1.90	2
Reliable Poultry Remedies	.25	1.20	1
Rhode Island Reds	.75	1.65	2
Turkeys	.75	1.65	2
Western Poultry Book, by Mrs. Basley	1.00	1.75	2
BEES			
A B C and X Y Z of Bee Culture	$ 1.50	$ 2.35	3
Beekeeper's Guide, by Prof. Cook	1.20	2.00	3

We pay the postage. Books sent as premium only when full number of new paid subscriptions accompany order. Upon request we will gladly quote price on any not included in this list. Send orders with remittance to

Cultivator Publishing Co.

115 No. Broadway, Los Angeles, Cal.

San Francisco--Los Angeles Produce Markets

Los Angeles Market

LOS ANGELES, August 12, 1914.

BUTTER

Butter is lower than ever and seems to be greasing the toboggan for a still worse slide. Many creameries are cold storing rather than sell at disastrous prices.

Prices to trade 4 cents above following quotations:

Creamery Extras	23
Firsts	20
Country	19
Ladle	18

CHEESE

Prices to trade 1 and 2 cents higher:

Eastern Daisy	18½@19
California Fresh	14@14½
Domestic Swiss	23@24
Longhorn	19@19½
Imported Swiss	35@37

EGGS AND POULTRY

Eggs up and strong. Receipts light. The Eastern and Northern supplies are falling off rapidly.

Prices to trade 3 cents higher than following quotations:

Fresh ranch, case counts	34
Candled	36@37
Selected	32½
Northern Case Count	33
Petaluma-Santa Rosa	34
Price to producer:	
Hens, lb.	15@18
Roosters	8
Broilers, lb.	15@16
Fryers	15
Roasters, lb.	17
Turkeys	18@27
Ducks	14
Geese	14
Squabs, doz.	2.50

LIVE STOCK

The following quotations are f. o. b. Los Angeles on all stock:

Hogs, 175 to 200 lbs., per cwt.	9.50
Prime Steers	7½
Heifers	6¼
Calves, lb.	8½
Sheep—	
Ewes, head	4.00
Wethers	4.25@5.00
Lambs, head	4.00

POTATOES

Wholesale selling price:

Sweets	1.50@1.65
News, cwt.	1.30@1.40
Northern Burbanks, cwt.	1.30@1.40
Highland, Burbanks	1.40

ONIONS

Wholesale selling price:

Australian Brown	1.65@1.75
Silver Skins	1.85@1.90
Yellow Danvers, sack	1.60@1.75
Garlic	10@12

VEGETABLES

Wholesale selling price:

Artichokes, Northern, doz.	90@1.00
Beets, doz.	30@35
Beans, String	3@4
Lima	5@6
Cabbage	65@75
Carrots, doz.	30@35
Cauliflower, doz.	1.10@1.25
Celery, doz.	40@60
Corn, Sugar, box	50@60
Cucumbers, lug	35@45
Egg Plant	4@6
Escarole, doz.	40
Horseradish, lb.	10@12
Leeks, doz.	35@40
Lettuce, crate	70@85
Mint, doz.	35@40
Okra, lb.	12@15
Onions, Green, doz. bunches	15@20
Oyster Plant	25@30
Parsnips, doz.	25@30
Peas, lb.	5@7
Peppers	5@6
Bell, lb.	7@9
Chili, lb.	4@5
Radish, doz.	15@20
Rhubarb—	
Crimson Winter	70@80
Spinach, doz.	20@25
Squash—	
Summer, lug	20@30
Crookneck	25@35
Turnips	30@35
Tomatoes, lug	25@40

FRESH FRUIT

Wholesale selling price:

Apples,	
Red Astrachan, box	75@1.50
White Astrachan	1.35
Bellflowers	1.00@1.35
Gravensteins	1.00@1.25
Apricots, lug	1.10@1.25
Bananas	3½@4
Berries—	
Strawberries, basket	3@4
Raspberries, basket	5@7
Blackberries, basket	4@5
Loganberries, basket	5@6
Cantaloupes—	
Locals, small	90@1.10
Locals, large	2.25@2.50
Casabas, doz.	1.00@1.25
Crabapples, box	1.00@1.65
Figs, 1-layer box	90@1.50
Grapes—	
Concord, crate	1.00@1.50
Black, lug	1.00@1.25
Malagas, crate	1.00@1.25
Isabella, crate	1.00
Nectarines, lug	90@1.20
Peaches, lug	50@1.25
Pears, Bartlett, box	1.00@1.20
Burbanks	75
Pineapples, lb.	6@7
Plums, lug	60@1.25
Watermelons, lb.	1@1½

CITRUS FRUIT

Wholesale selling price:

Lemons	3.75@5.50
Grapefruit, Seedless	2.25@2.50
Valencias	1.75@2.60

DRIED FRUITS

Wholesale prices to retailers are:

Evaporated Apples, Fcy., lb. bxs	10@17½
Apricots	11@17½
Nectarines	12½
Peaches	6½@7¼
Pears	8@12
Prunes	6@17
Plums	10

NUTS

Prices named by California Walnut Growers' Association are:

No. 1	17½
Budded Walnuts	21
No. 1 Soft Shell Walnuts	16
No. 1 Hard Shell Walnuts	15½
No. Twos	11½
Wholesale price:	
Almonds—	
I X L	22@23
N P U	21@21½
Drakes, Thin Shells	18@19
Pecans	16
Peanuts—	
California, Raw	6
Japan	7½
Eastern	7½
Pine Nuts	15@16
Rice Corn	5.00@5.25

HONEY

Wholesale selling price:

Comb, Fancy, Water White	15
White	13
Light Amber	11@12
Extr. Water White	8
White	7½
Light Amber	7
Beeswax	35

BEANS

Wholesale selling price:

Producer's price not far from one dollar under these quotations:

Limas	8.00@8.25
Lady Washington	5.00@5.25
Black Eyes	9.00
Pinks	5.00@5.25
Lentils	7.00@8.00
Small White	6.50@6.75
Garbanzos	9.00@9.25

RICE

California	3.50@4.75
Broken	3.00@3.75

HAY

Buying prices f. o. b. cars Los Angeles:

Barley	10.00@11.00
Wheat Hay	10.00@11.00
Tame Oat	11.00@13.00
Alfalfa	9.00@11.00

GRAIN

Wholesale selling prices f. o. b. Los Angeles:

Wheat	1.90
Corn	2.15
Oats, Red	2.35
Oats, White	1.60
Kaffir Corn	1.90
Millet	3.75
Popcorn	4.75@5.00
Egyptian Corn	2.20
Barley Seed	1.45
Milo Maize	2.00
Cal. Seed Oats	2.25
Sunflower Seed	5.25@5.35

FEED STUFF

Wholesale selling prices f. o. b. Los Angeles:

Bran, Heavy	1.75
Alfalfa Meal	1.05
Alfalfa Syrup, per cwt.	1.05
Beef Scraps	3.00@3.10
Beet Pulp	1.25
Cracked Corn	2.20
Feed Meal, cwt.	2.25
Cotton Seed Meal	1.85
Blood Meal	3.60@3.70
Bone Meal	2.00@2.10
Charcoal	1.90@2.00
Bone Green	1.95@2.05
Cracked Wheat	2.05
Oil Cake Meal	2.05
Fish Meal	3.15@3.25
Rolled Oats	1.65
Rolled Barley	1.20
Middlings	2.00

San Francisco Market

SAN FRANCISCO, August 11, 1914.

BUTTER

Butter took an additional half cent soon after last week's quotations were made, and the advance has been steadily held. Market now firm with some sales of extra going slightly above quotations.

Prices to trade 4 cents above following quotations:

Extras	25½
Prime Firsts	23
Firsts	22
Seconds	21½

CHEESE

Wholesaler to retailer.

California Y, American	14½@15
California Flats	11@14
Cheddar	20

EGGS AND POULTRY

Eggs have fluctuated somewhat, but the tendency is upward and slightly higher prices than last week are noted.

Prices to trade 3 cents higher than following quotations:

Extras	31
Firsts	27
Select Pullets	27
Hens	16@18
Fryers	20@21
Roosters, old	12
Roosters, young	22@23
Broilers	18@20
Belgian Hares, lb.	10@13

LIVE STOCK

San Francisco prices, gross weight:

Steers	4@6¾
Cows and Heifers	3@6
Calves, lb., live weight	6@9
Hogs	8@9
Wethers	5@5½
Ewes	4@4½
Milk Lambs	6½@7½

POTATOES

Delta, Burbanks	75@1.00
New Potatoes, lb.	1@1¼
Sweets, lb	1½@2

ONIONS

Yellow, sack	80@90
Garlic, New	5@8

VEGETABLES

Wholesale selling price:

Beans—	
Limas, lb.	5@6
Wax, lb.	1@2
Strings	1@2
Cabbage, cwt.	1.00@1.25
Carrots, sack	35@50
Corn, Green, sack	75@1.25
Cucumbers, lug	15@35
Egg Plant, lug	35@50
Peas, lb.	2@4
Peppers—	
Bell, lug	25@40
Chili, lug	25@35
Rhubarb, box	60@1.00
Tomatoes, lug	30@50

FRESH FRUIT

Apples—	
Alexander	50@75
Gravensteins	50@90
Blackberries, chest	1.50@2.00
Bananas, Hawaiian, bunch	1.25@1.75
Cantaloupes, crate	30@65
Ponies	30@35
Delta, lug	25@40
Casabas	50@75
Crabapples	30@85
Figs—	
Black, box, single layer	30@35
Black, double layer	60@65
White, box, single layer	65@85
Grapes—	
Black	25@40
Tokay	90@1.00
Seedless	50@75
Malagas	50@75
Muscats	50@75
Huckleberries, lb.	8@10
Nectarines, crate	50@1.00
Peaches, lug	40@60
Lugs	50@75
Pears, box	50@1.50
Plums, crate	40@80
Pineapples, Hawaiian	1.50@2.00
Prunes, crate	60@1.00
Quinces	50@85
Strawberries, chest	1.75@3.50
Watermelons, doz.	75@1.50

CITRUS FRUIT

Grapefruit, Seedless	1.00@2.50
Lemons	4.50@7.50
Limes, cs.	4.00@5.50
Tangerines	75@1.25
Valencias	1.75@2.50
Mediterranean Sweets	1.00@1.50

DRIED FRUITS

Wholesale prices are:

Prunes—1913 crop, bulk basis: 30s-40s, 7c; 40-50s, 7c; 50-60s, 7c; 60-70s, 7c; 70-80s, 7c; 80-90s, 5¾c; 90-100s, 5½c. The above are for both Santa Clara and outside; 1912 crop worth practically as much as the new crop: 20-30s, 15c in 25-lb. boxes.

Other Fruits. 50-lb. Boxes—	Standard	Ch.	Extra Ch.	Fcy.
Evap. Apples	....	9 c	9½c	10c
Peaches	....	5 c	5¼	6c
Pears	8½c	9 c	10 c	....

RAISINS

The following prices are f. o. b. Fresno, as given out by the Associated Raisin Company, and are effective on all sales until August 1, 1914. 1912 crop practically the same figures as the new crop. 1913 crop, per lb., effective at once: Loose Muscatels (50s), 1-crown, 4¾c; 2-crown, 5½c; 3-crown, 6c; 4-crown, 6c; Seeded, fancy, 16-oz. pkgs., 7½c; do, 12-oz., 6c; do, bulk, 6¾c; do, choice, 16-oz., 7c, do, 12-oz., 5¾c; do, bulk, 6½c; Sultanas, no stock; Thompson Seedless, unbleached, 50s, 6c; 16-oz., 7⅛c; 12-oz., 5&c; recleaned, ¼c advance; do, floated, ½c advance; London Layers, no stock. Local representatives of the Association are asking ¼c higher, while several of the large packers are quoting ⅛c under the Association's figures.

The California Associated Raisin company has issued a price list dated May 28th, on the 1914 crop.

3 Crown London Layers, 20 lb. box, $1.15. 4 Crown Cluster, $1.40. 5 Crown Dehesa Clusters, $2.00. 6 Crown Imperial Clusters, $2.50. 5-lb. boxes, 50c extra; 10-lb. boxes, 25c additional. Fancy Clusters, 1-lb. cartons, 20 to the box, $1.65. Fancy Clusters, 2-lb. cartons, 12 to the box, $2. Fancy Clusters, 5-lb. cardboard cartons, 4 to the box, $2.25. Bulk Layers in 50-lb. cases, $2.50. All prices guaranteed against decline to January 1, 1915, and subject to advance without notice."

NUTS

Peanuts—	
Unpolished	5@6
Polished	6@6½
Japanese, Shelled	6¼@6¾
Italian Chestnuts	6½@7

BEANS

Wholesale selling price:

Limas	7.25@7.50
Pink	4.40@4.50
Black Eyes	6.25@6.50
Cranberry	5.25@5.50
Small white	4.85@5.75
Garbanzos	6.75@7.00
Large White	4.25@4.50
Bayou	4.25@4.50
Manchurian Speckled Bayous	4.00@4.10
Manchurian Butters	4.60@4.80
Manchurian Cranberry	4.00@4.25
Red Mexican	6.50@6.75
Horse Beans	1.90@2.00

HONEY
1913

Comb, Water White	14@15
Amber	12@15
Dark	10@11
Extracted White	7½@8
Light Amber	6½
Dark	3½@4
Beeswax	27@32

HOPS
1913

Sacramento Valley	15@16
Sonoma-Mendocino	17@17¾
Oregon Clusters	16@17
1914 Contracts	14@15¾

HAY

Under date of August 8 Scott, Magner & Miller say:

Receipts of hay for the past week were 4234 tons. Very little choice hay is to be had, and this is disposed of without difficulty, although the poorer grades keep the level of prices down.

Consignments of hay for shippers' account are heavy. Alfalfa sales have been rather light for this season, but the demand is also light.

Fancy Wheat Hay, lt. bales	11.00@12.00
No. 1 Wheat or Wheat and Oat	9.00@10.00
No. 2 Wheat or Wheat and Oat	7.00@8.50
Choice Tame Oat	10.00@11.00
Other Tame Oat	7.00@9.00
Barley	6.00@8.00
Wild Oat	6.00@8.00
Alfalfa	6.00@9.00
Stock Hay	4.50@5.00
Straw, new	40@45

GRAIN

Wheat, Cal. Club	1.55@1.57½
Corn, Eastern Yellow, blk	1.70@171¼
Egyptian, White Corn	1.70@1.72½
Barley, Feed	95@1.00
Oats, white	1.22½@1.25
Oats, red	1.07½@1.17½
Millet	2¾@3
Flaxseed, lb.	4½@5
Mustard, Brown	4@4¼
Rye	1.50@1.65
Sunflower	5@5½
Vetch Seed	3@3½

FEED STUFF

Alfalfa Meal, car lots	11.50@12.50
Bran, ton	25.50@26.50
Feed Cornmeal, ton	41.00@41.50
Cracked Corn	41.00@41.50
Rolled Barley, ton	21.50@22.50
Rolled Oats, ton	37.00@37.50
Middlings	31.50@32.00
Shorts	27.00@28.00

WEATHER CONDITIONS

For week ending Saturday, August 8, 1914.

Report from the various stations of the U. S. Weather Bureau, by Geo. H. Wilson, director, San Francisco.

	Rainfall Data.			Temperature Data.	
	Past Week.	Seasonal to Date.	Normal to Date.	Maximum.	Minimum.
Eureka	.00	.01	.12	62	48
Red Bluff	.00	.00	.00	104	64
Sacramento	.00	.00	.00	98	56
San Francisco	.00	.02	.01	68	52
San Jose	.00	.00	.00	86	50
Fresno	.00	T	.00	106	60
Independence	.00	.06	.00	100	60
San Luis Obispo	.00	.00	.03	82	52
Los Angeles	.00	.01	.00	86	56
San Diego	.00	.00	.00	74	60

T means trace.

Oilcake Meal	32.00@33.50
Cocoanut Oilcake Meal	25.00@26.00
Linseed Oilcake Meal	27.00@28.00

Citrus Fruit Market

LOS ANGELES, August 12, 1914.

While lemons are going out of sight oranges are in the dumps. Great quantities of deciduous fruits combined with the uncertain financial conditions induced by war have proved desperately discouraging to the Valencia market. Good stock of regular sizes is still commanding close to the $2.00 f. o. b. basis, but close observers fear it will be worse before it is better.

The same conditions which are proving so discouraging to oranges will probably boost lemons to exceptionally big prices. Instead of hundreds of thousands of boxes of foreigns being afloat, there is not a Mediterranean lemon in sight. California, with an exceptionally light supply, will have practically the entire U. S. market.

Shipments.

Shipments of oranges to date from Southern California since November 1, 1914, 34,613 cars; lemons, 2,541; total, 37,154. To same date last season oranges, 12,540 cars; lemons, 1,947; total, 14,487. Total citrus fruits two years ago this date, 32,705.

NEW YORK, Aug. 10.—Nineteen cars Valencias, two mixed cars sold. Market is slightly better. Fair and warmer.

VALENCIAS—	Avge.
Modjeska, xf	$3.55
Mahala, L. V. W. Brown	3.10
Glendora Home, A. C. G. Ex	2.85
SWEETS—	
Golden Rod	$2.10
Altura	2.30
Viking	2.15
ST. MICHAELS—	
Altura	$2.25
ST. MICHAELS—HALVES—	
Perfection	$1.10
GRAPEFRUIT—HALVES—	
Mahala (brown boxes)	$1.75
Mahala (white boxes)	1.50

PHILADELPHIA, Aug. 10.—Four cars sold. Muggy.

VALENCIAS—	Avge.
Geo. Washington, O. K., Tustin	$2.90
Cowboy, O. K., Tustin	2.55
Colombo, S. T., Placentia	2.70

PITTSBURGH, Aug. 10.—Four cars oranges sold. Hot.

VALENCIAS—	Avge.
Jasmine, D. M., Monrovia	2.40

ST. LOUIS, Aug. 10.—Clear and warm. Steady. Five cars oranges and one car lemons sold.

VALENCIAS—	Avge.
Hunter, A. C. G., Azusa	$2.30
Cycle, F. C., Fillmore	2.75
Setter, A. H., Arlington	2.80
LEMONS—	
Corona Queen, Q. C., Corona	$4.75
Minerva, Q. C., Corona	5.60
Cycle, F. C., Fillmore	5.30

CINCINNATI, Aug. 10.—Warm. Market weak on small sizes. Three cars Valencias sold.

VALENCIAS—	Avge.
Colombo, S. T., Placentia	$2.55
Bell	2.85

CLEVELAND, Aug. 10.—Three cars Valencias sold. Market is weak. Hot.

VALENCIAS—	Avge.
Colombo, S. T., Fullerton	$2.65
Las Palmas, S. T., Fullerton	2.25
SWEETS—	
Sappho	$2.10

BOSTON, Aug. 10.—Twelve cars oranges sold. Cloudy, muggy. Market doing better.

VALENCIAS—	Avge.
Rooster, O. R., Orange	$3.15
San Rafael, S. T., Glendale	2.65
SWEETS—	
Blue Bell	$2.00
GRAPEFRUIT—HALVES—	
Orchard	$1.95
GRAPEFRUIT—	
Cleghorn, seedless	$1.10

CHICAGO, Aug. 10.—New apples, 1.00 @3.50 per barrel. Lemons, California, .50@6.00 per box; oranges, 3.25@3.50. Pineapples, per crate, 1.50@3.50. Peaches, 2.00@2.25 per case, 15@20 per one-fifth bushel basket. Pears, 75@ .25 per bushel. California apricots, per box, 75@1.25. Plums, 85@1.50 per crate. Pears, 2.25@2.50 per box. Grapes, .00@3.25 per case. Cantaloupes, 1.25 @2.75 per standard crate. Watermelons, 125.00@200.00 per car. Blackberries, 1.25@1.50 per 16-quart case. Blackcaps, 1.25@1.35 per 24 pints. Gooseberries, 90@1.10 per 16-quart case. Blueberries, 1.75@2.50 per 16-pint case. Plums, 60@70 per 16 quarts.

MAINTAINING HUMUS

Continued from Page 160

apply the amount of water necessary for an irrigation, now we apply the same amount of water in three furrows on heavy clay loam soil with the necessity of opening several flume holes for each furrow in order to get the water through. The result is a thorough irrigation without melting the soil down to an adobe bed, and cultivation is a much simpler matter. The soil instead of being lifeless and inert is flocculent and mellow, acts like a sponge in holding water, and the vegetation growing upon it makes a good vigorous growth. But still I am not satisfied. I want still more humus and less orchard work. To this end I am conducting experiments with summer crops.

Green Crops What We Want.

I have been greatly interested in the controversy about mature or green crops and this is part of the key to the answer to some of your questions. I am convinced that Prof. Lipman is absolutely right in maintaining that green crops are what we want. It has been said often that because the green material soon disappears from sight after being plowed under, it is lost. I know positivly that this is not the case. I have always practiced plowing the cover crop under green, and am getting increasingly good results. The fibrous material produced by dry mature cover crops has developed the cellulose, and cellulose in the soil retards nitrification, and we should be cautious at what time we apply such material to the soil. If it is applied when the trees are carrying "the peak of the load" in making the greatest growth of the season the trees will be robbed of the food necessary for them. Or if at fruit setting time the trees will not have the strength to retain the crop and dropping will result. A heavy cover crop left until April for plowing under will be mature enough to be a cellulose crop and will retard nitrification to the degree of robbing the trees of their rightful food at the time when they need all they can get. So also in applying straw. There will be a period after its application, lasting a month and more, when nitrification will be retarded, and the trees will for that period have less available food than before its application. For this reason, we prefer to apply it in the fall so that it will be converted, or well on the way, before growth begins. Or better yet, if the straw is first used as an absorbent in the stable, it will decay more quickly, and for that reason may be applied later in the season.

Various Sources of Humus.

The use of shavings and sawdust as sources of humus is in my mind of doubtful expediency. They are more fully cellulose materials than the others mentioned and decay very slowly. Doubtless in course of time they will be available as plant food, but the process is too slow.

There is a movement at this time for growing alfalfa in the orchard. For citrus orchards, unless some new method of application is discovered, it is bound to fail, and perhaps lead many unsuspecting ones into error. We have seen it tried many times, and in every case it injured the orchard.

Manure of course is an ideal source of both plant food and humus. But the supply is not equal to the demand, making the price often prohibitive.

I believe that all these materials should be plowed in deep so as to provide for quick and thorough decay. They are of no food value until they are decayed, but they still serve us as humus long after they have disappeared from view to the casual observer.

Advantage of Winter Growth.

I have not tried buckwheat, but it seems good as a summer crop. The fact that it grows rapidly is in its favor, and the self sowing feature is good. There are several kinds of bean crops that deserve consideration; cow peas, perhaps the tepary bean, and others. I would not forget that the legumes are preferable where they can be grown, and would not allow the summer crop to take the place of the winter legume crop. The legumes yield atmospheric nitrogen, the winter crop prevents washing during torrential rains and is grown at a time when the trees are dormant or near so. They also take advantage of the greater supply of water. Our experience however teaches us that with the use of cover crops we may by persistent use increase the water holding power of the soil to the extent that a much smaller aggregate of water will suffice, though it may take a much larger volume to give an irrigation, by spreading the times of irrigation over longer periods.

Experiments with Corn.

In a recent conversation with Mr. I. G. McBeth of the United States department of agriculture, who is working here on the problem of nitrification in the soil, he made the remark that it is a peculiarity of corn that the available nitrogen is not depleted during its growth. This has led me to try corn as a summer cover crop, to be plowed under when still green and succulent. I have sown it broadcast and furrowed deeply after a good irrigation. Am using white field corn and amber sorghum in this experiment. It promises to produce a large amount of green material.

I am also trying out the Whippoorwill and Blackeye peas at the same time. During this experiment the nitrogen content of the soil will be kept track of so that we will know whether the surmise is correct that the corn will not take the available nitrogen from the trees while it is growing. If this should prove true it will be a big gain, for one of the main objections to summer cover crops is the danger of robbing the trees when they need all the nourishment they can get to carry on the rapid growth of both tree and fruit.

In order to further carry out this line of experiment I have also planted a block to a quick growing sorghum, using the amber sort. Should this prove satisfactory it will be less expensive for seed than the corn.

In conclusion, I wish once more to emphasize the conviction that the largest fertilizer problem we have is the proper maintenance of a humus supply. With this solved, we will have no plow sole, no scarcity of water, reduced fertilizer bills, and a reduced amount of labor in cultivation.

YOUR PROFITS STOP THE LEAKS $ $ $ $
HUNDREDS OF DOLLARS
may be saved by you, Mr. Farmer.
Costs ½¢ per day
Write for FREE Booklet.
THE AGRICULTURAL CO.
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Buy Foothill Grown Trees

For good roots, thrift, and hardiness they can't be beat. Quality considered they challenge all competition. We are prepared to furnish the best of everything. Olive, Almond, Peach, Pear, Plum, Prune, Apricot, Cherry, Apple, Walnut, Grape, Quince, etc.

Orders are being booked daily, and we urge you to not delay.

WRITE US
Silva-Bergtholdt Nursery Co.
Box 751, Newcastle, Cal.

WATER PIPE CHEAP
200,000 FEET
All Sizes—Immediate Delivery.

Just received several carloads new and second-hand Water Pipe, Oil Well and Water Casing. Water pipe (per foot), ½-inch, 2½c; ¾-inch, 3c; 1-inch, 4c; 1¼-inch, 5c; 1½-inch, 6c; 2-inch, 7c; 3-inch, 15c. O. D. Casing (per foot), 2-inch, 6c; 3-inch, 12c; 3½-inch, 15c; 4-inch, 17c. Riveted pipe (per foot), 4-inch, 12c; 10-inch, 30c—also surface irrigation pipe. Many other sizes to select from. Prompt shipment. Write, wire or phone. Adams Pipe Works, 2030 Bay St., Los Angeles, Cal. Phones: Broadway 1264—F1917. (Under entirely new management.)

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To Investors and Those Who Are Looking for Homes:

For the next 30 days we offer our lands situated just across the line in Sonora, Mexico, from $10 to $15 per acre.

This property is located on the main line of the Southern Pacific Railway, one day's ride from Los Angeles. It is especially adapted for the raising of wheat and for general farming. Two crops are grown annually. No irrigation necessary. Fine soil and beautiful climate. This will not only prove to be a number one investment, but a beautiful home can be made at very little expense. Hundreds of people are investigating this new country, and large numbers have already purchased. Call or write for literature giving full details.

Sonora Valley Land Company
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For further particulars apply to
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A. L. SCOTT, President. SACRAMENTO C. W. PAINE, Secretary.

ANNOUNCEMENT!

The Story of the
New Oakland
was given in the Saturday
Evening Post for July 25th

Not until Monday were we able to get our sample
1915 Model 37 Touring Car

"Go see the New Oakland."
51 Improvements and Refinements

Hawley, King & Company
1027-1033 South Olive St., Los Angeles

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Whether you want just a small pump for the house, or a large one for irrigation use, it certainly will pay you well to

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The safe way is to get advice from pump specialists like ourselves. As manufacturers we have solved hundreds of pumping problems—and our accumulated experience is at your command. Our advice may save you both money and trouble. We manufacture and sell

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Let us help you select a pump adapted to your particular requirements. CATALOG 28-B describes Bean Centrifugal Pumps. CATALOG 28-D describes all other pumps (also Bean Distillate Engines). A postal will bring either or both. Why not send now?

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Make Your Own Cement Fence Posts

We furnish full illustrated plans and specifications showing how to make complete outfit for making reinforced concrete posts for only a few dollars, and also how to make the posts at low cost. With the outfit equipped with our improved metal fastenings, any ordinary workman can rapidly make posts that should last forever. Every person needing posts should have one. Our method of reinforcing is simple, strong and inexpensive.

Instructions by practical cement man. We will ship, charges prepaid, a full set of metal fastenings also plans as above on receipt of only $5.00. Reference, Home Savings Bank.

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SCREW CASING
Alexander Pipe Company
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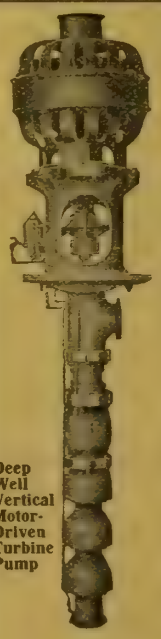

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High Grade Irrigation Pumps

The Jackson Deep Well Turbine Pumps are so carefully designed and constructed they have a higher efficiency than any other pumps of this type.

Our motor driven pumps are absolutely noiseless and have neither valves, rods nor gears to get out of order.

Write for our latest bulletin describing these pumps and also tables on hydraulics.

Our Jackson Catalogue No. 48C is free. Send for one.

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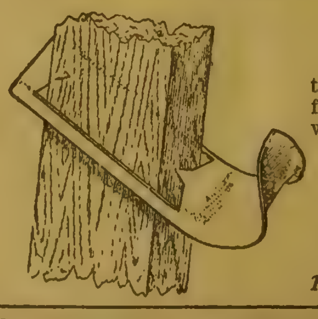
The **McIntyre Tree Prop Brackets**
Are the Best Made



Have a smooth, rounded surface for the limb to rest upon. Strong, well made and will last for years. Will not chafe the tree like the wire brackets.

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CALIFORNIA CULTIVATOR

Rural Californian combined with California Cultivator

An Illustrated Weekly Magazine, Devoted to the Rural Home and Ranch

LOS ANGELES August 20, 1914 SAN FRANCISCO

Good Roads into San Francisco from the South

A Section of the Roads Being Constructed by the State Highway Commission. California's Good Roads Will Prove of Great Value in Showing to Our Many Visitors Next Year Some of the Numerous Beauty Spots of the State

Motor Cars and Trucks of Merit

The mark of quality

The mark of quality

The Thos. B. Jeffery Co. is devoting itself to the production of motor cars most modern in their mechanical superiority, unexcelled in quality and quite distinctive in up-to-the-minute style and beauty.

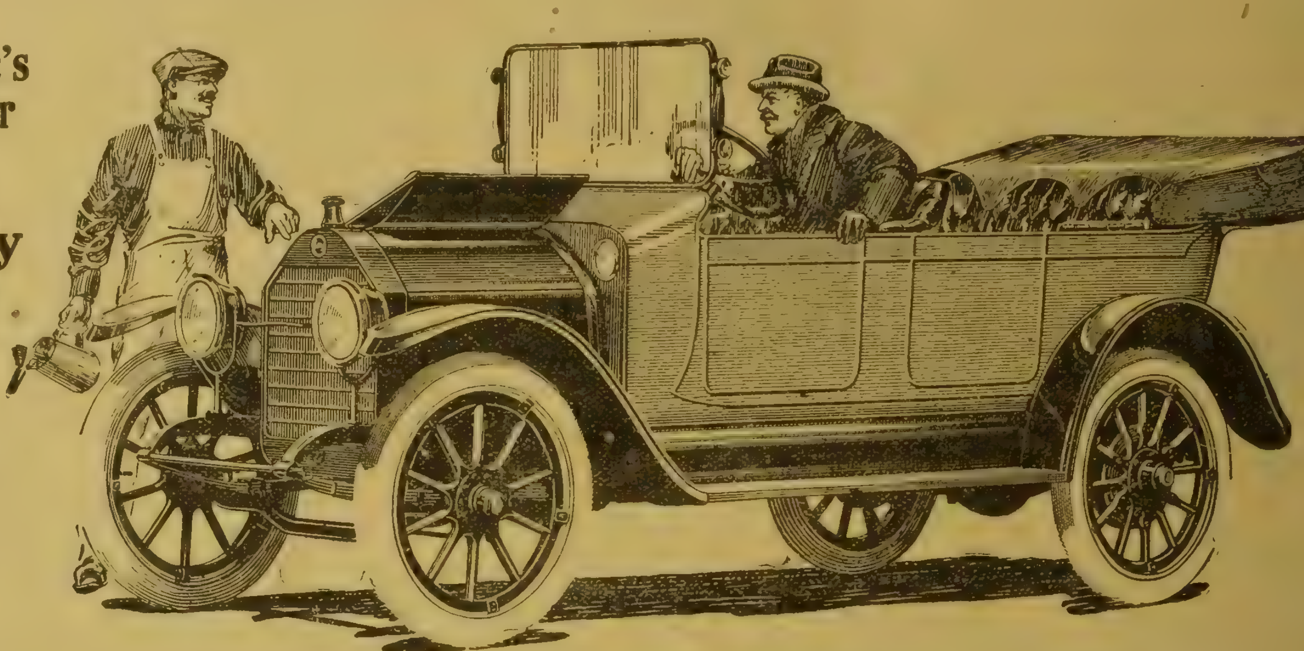
The success of the Jeffery Four, the first high grade, light weight, economical car of quality to be sold in America at a moderate price, has enthroned this car as a leader among Fours.

Its distinguished companion, the Jeffery Chesterfield Six, will, through the possession of the same inherent quality, naturally command the same position among Sixes.

It would not be possible for the Jeffery Company to maintain this leadership through adherence to the old annual model policy. It is the purpose instead to give Jeffery owners the best motor car they can possibly build with complete disregard of all projudices of engineering design or selling policy.

The Mechanic's Ideal Car

The Jeffery Four



$1575
Los Angeles

Your neighbors judge you by the things you do: The way you keep up your farm and the buildings and barns. The kind of farm machinery, cream separators, etc., you buy. And by the motor car you drive. Why have the outward appearance of prosperity—good farms, well painted houses, trim, well-kept fields, up-to-date-farm machinery, and cheap, uncomfortable automobiles?

You owe it to yourself, to your family, to have a car in keeping with your standing in your community. You need not buy an expensive car; if you do you will doubtless get a heavy car. That means big tire and oil bills and short mileage for a gallon of gasoline.

Get over the habit of thinking of motor cars by price. You know yourself that it would cost one manufacturer $2000.00 to build the identical car that some better-equipped and financed concern could build for $1500.

Get from some expert mechanic his statement of the things that a good car ought to have, and then start out to find a car that has them.

This line of investigation is going to bring you to the Jeffery. But don't accept the fact that Jeffery quality is 100% because this advertisement says so. See it for yourself and make a salesman show it to you.

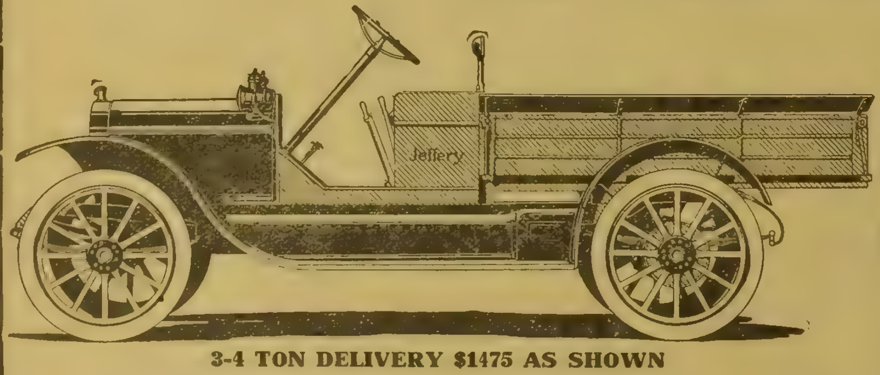
When you make comparisons you will be surprised at the quality in Jeffery cars and the price of the Four is only $1575, Los Angeles.

This car is built to a standard and not to a price. A few items of specification are as follows:

High speed, high efficiency, four-cylinder motor cast enbloc—3¾x5¼. 38 H. P. U. S. L. starting and lighting system. Duplex Bosch magneto. Rayfield carburetor. Four forward speed transmission. Daimler leather coupling. Spicer universal joints. Full floating rear axle. Imported annular ball bearings throughout. Rich Tungsten steel valves. Cone clutch. 116 wheel base, 34x4 tires, demountable rims. Left drive, center control. Rothschilds body, finished Brewster green. Never-leak top. Weight 2850 complete. Chrome nickel and vanadium steels only.

Wonderful Quad 2 Ton Truck--4 Wheel Drive--4 Wheel Steer--4 Wheel Brake--Chassis $2950

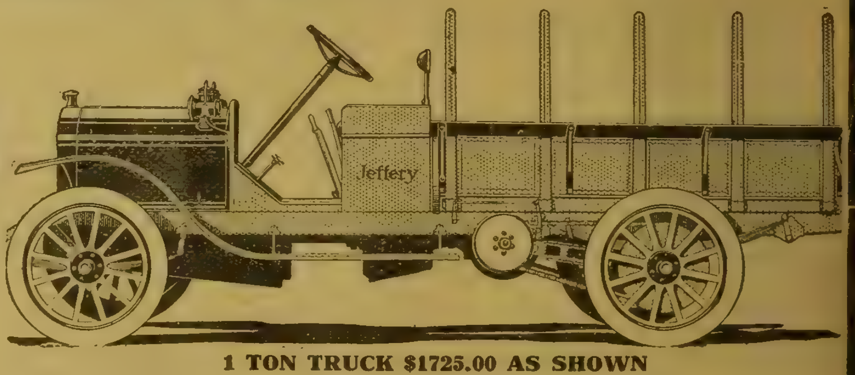
The 1 1-2 Ton Chassis Only $1800



3-4 TON DELIVERY $1475 AS SHOWN

This type of motor wagon is best adapted for delivering articles light in weight and where many trips are to be made each day. It is better to make several complete trips with a light truck of this kind than to hold up packages for delivery with larger cars when most of the time the big truck equipment is running with too light a load, making for lower efficiency and poor service to customers. The grocer who has 3 or 4 horse-drawn wagons, can replace these with a Jeffery ¾ Ton Truck. It will carry the same total load, give more mileage and quicker service.

The Chesterfield Light Six $1775.00



1 TON TRUCK $1725.00 AS SHOWN

The Jeffery 1 and 1½ Ton Trucks are logical in size, capacity and speed to meet the requirements of about forty different lines of business. These lines include those in which the delivery problem is one of medium loads and short or long hauls. They are particularly well adapted for the delivery of varying loads where the truck starts with a maximum load, and the load is reduced or increased as subsequent stops are made. One of the most popular body types for this truck is the platform or stake platform, with or without chains or side boards. Loading space of 10x5 feet 6 inches can be provided, making this truck very practical for brewers, furniture houses, manufacturers and others handling heavier loads. Stakes can be furnished in several lengths, and if desired, a detachable standing top with side curtains can be provided.

Some territory open for reliable sub-dealers. Write for proposition.

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California Cultivator

Rural Californian combined with California Cultivator

Vol. XLIII No. 8 LOS ANGELES: THURSDAY, AUGUST 20, 1914 One Dollar Yearly

Sheep on the Small Ranch

Both Mutton and Wool Breeds Afford Opportunity of Disposal of Many Wastes on Small Farms. Method of Handling and Best Feeds.

Written for Cultivator Readers by Dr. Leroy Anderson

During my childhood and youth on a western New York farm I recall only occasionally a year when there was not a small band of sheep kept. The flock usually consisted of from 25 to 30 ewes as a permanent breeding basis. The farm consisted of 110 acres divided into 10 and 12-acre fields, including 12 acres of apples and a 15-acre wood lot. The sheep pastured in the lane, the orchard, the cleared places in the "woods" and in regular pasture fields. In the winter they had a warm shelter and fed on clover hay, oat straw and grain toward spring when lambing time began. They helped in keeping the farm free from weeds. They furnished the family with a goodly portion of the summer's fresh meat and I still remember that home-dressed mutton as the best I ever ate. They helped to keep up the fertility of the soil. They surely were profitable or my father would not have kept them.

In Yolo County

A few miles northwest of Woodland are two brothers on a 40-acre alfalfa ranch, who are believers in sheep. When I called on them in May they had 19 breeding ewes, which was the increase from a beginning of four or five ewes a few years ago. A pure-bred ram had never been used, but the general type was Shropshire. The average annual increase in lambs has been 100 per cent, enough twins being born to make good any losses. The male lambs are sold to the butcher and likewise ewes except such as are needed to continue the breeding number. The price for lambs in 1913 was $3.25 a head. No sales had been made for 1914, but the prospect looked better, for a neighbor with a large flock had contracted his for $4.10. The spring clip of wool was four pounds each and sold at 15 cents. The total annual clip is usually about seven pounds per head and the wool pays all the expenses of the flock. The receipts from sale of lambs is, therefore, counted clear profit. When asked what was fed the sheep one brother replied, "Whatever the other stock wont eat." On the day of my visit the sheep were cleaning up the growth of grass and weeds in the back yard between the house and barn. They kept the irrigation ditches clean from weeds and were turned in any field that happened to need trimming.

There is nothing big nor spectacular about this small flock of sheep. Neither is there anything spectacular about the great number of small ranches in California. But is not such a band of sheep worth while keeping on many a ranch? Here is a profit of seventy dollars a year on an investment of an equal amount or at the most not exceeding one hundred dollars. Feed that might otherwise be wasted is turned into meat and wool, the ranch is left free of foul weeds and the fertility is increased. More money would be made if better sheep were kept than these brothers have. The demand for registered stock is sufficient to warrant many a man to purchase a few head and enter the lists as a regular stock breeder when the profit (and the pleasure) will be much greater.

Care of the Flock.

If one begins with grade ewes, the larger type of Merino is as good as any, and can easily be selected from the large bands in the state. The Merinos are good milkers and good mothers, and when crossed with a ram of the mutton type produce an excellent lamb. Probably a Shropshire ram would be best to use as this breed is large and considered among the first for mutton. If one were beginning with registered stock he would make no mistake in selecting the same breed. I mention mutton breeds because of the scarcity and high prices of meat.

Sheep require little care as compared with dairy cattle or swine, and are little subject to disease. In the winter they need shelter from the rains and in the summer shade from the hot sun. The ewes should be bred so as to drop lambs as early in the winter as possible, as this enables the lambs to be placed on the market sooner in the spring or summer with a correspondingly better price. The period of gestation in ewes is about 150 days. For January lambs, therefore, the ram should be turned with the flock in August.

(Continued on Page 182.)

Culture and Handling of Shipping Plums

Address by H. C. Blake Before Fruit Growers Convention at Davis

This paper covers conditions obtaining only in California. I will not discuss the origin of the plum, as it makes but little difference to the practical commercial grower whether it was introduced here from Asia or Europe or some other place; suffice it to say that nearly all edible plums are found in the north temperate zone. Species of wild plums are to be found in most of the countries of the north and the south temperate zones.

In this paper I will not consider the prune, or especially the commonly called French prune, as it was very ably treated by Mr. Richmond at the Fresno convention in December, 1913, and his paper has been very generally copied and reprinted all over the coast.

Plums furnish us more different varieties than any other cultivated fruit, and also a greater range of flavor, texture, color, size and form. Because of the plum's great variability and the adaptation of the different varieties to different climatic and soil conditions, it is the favorite fruit for amateur propagators in developing new varieties, and the varieties are now almost without number.

For one contemplating going into the shipping plum business geographic location would probably be the first important consideration; next the selection of the proper soil, and third the selection of varieties, this last consideration to be somewhat influenced by the markets one intends to patronize.

At the present time there are but three or four localities in California that are very extensively engaged in the shipping plum business. They are located as follows: The Sacramento river district, comprising that portion of the river territory located between Sacramento on the north and Rio Vista on the south, and including the section around Lodi; the Vacaville district, comprising what is known as the English Hills and Lagoon valley and the Vaca valley proper; and the Hill section, comprising the Newcastle and Placerville districts.

These three localities are very extensive and successful plum growing districts, but the conditions obtaining in each are entirely different from those in the others. If you should locate on the river you would find a deep, rich, sandy sediment, loamy soil, with plenty of water for irrigation. Should you locate in the Vacaville section, good judgement must be exercised in the selection of a place. Secure a deep, rich loamy soil, though if very well drained and other conditions are attractive a heavier soil may sometimes be selected, but must be treated accordingly. Should you go to the Newcastle district you will find a decomposed granite soil entirely different from either of the other localities mentioned and requiring different treatment.

In the past the Tragedy has been the favorite plum on the river, but many other varieties succeed well. In the Vacaville district it seems that almost every variety known to mankind is being tried out to the limit. Of the 150 different varieties of plums shipped last season by the California Fruit Distributors, Vacaville seems to have been represented in almost every one. The Newcastle district runs strongly to Burbanks, but follows very closely with any newborn favorite reported from Vacaville. Placerville confines her shipments almost exclusively to the Hungarian.

When the selection of location, soil and variety has been made, the next important problem is the root stock, and a big problem it is, and one on which I hesitate to offer advice except in a general way.

The first choice for a root stock for all locations and conditions is the Myrobalan, followed very closely by the peach, but the peach requires a very well drained soil. A most excellent stock, though little used on this coast, is the Marianna, a hybrid originating some years ago in Texas. It grows very readily from cuttings, but does not sprout or "sucker," as it is commonly called.

Great care must be exercised in the selection of root stock, as some varieties refuse to make satisfactory union on certain roots, and other varieties refuse to produce a crop, while still others do not produce satisfactory quality.

In growing your nursery stock the usual nursery practice is followed. The seedlings are budded or grafted the first season, and generally remain in the nursery until the buds or grafts are one year old and have attained a height of from four to six feet.

Before the trees are planted in orchard form the land should be well prepared by plowing about eight inches deep with a good turning plow, and this plow should be followed in each furrow by a good subsoil plow running to a depth of from 16 to 20 inches. The subsoiling is sometimes substituted by the use of dynamite, but this must be done

(Continued on Page 174.)

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Citrus and Tropical Fruits

HUMUS

Written for the California Cultivator
By H. Culbertson, El Cajon.

(We regret that the following article was crowded from the special issue. Mr. Culbertson writes of farming operations from practical experience. He realizes the necessity of humus and gets it regardless of difficulties.)

The condition into which our soil gets is very strikingly illustrated by a test recently made by Dr. Lipman of the university. Two samples of soil were examined for bacteria content. The samples were taken from a grain field, one from a place where the yield of hay was over two tons to the acre, the other less than one-half a ton. The test was made by supplying in the laboratory a fertilizer of dried blood. The sample producing the two-ton yield of hay changed the blood into a form available for plant food quite readily. The one-half ton hay yield soil had no effect on the blood. The first kind of soil appeared to have a fair amount of humus, the other none at all.

This also suggests why the application of commercial fertilizers does little or no good in some instances.

Humus Makes Fertilizers Valuable.

We have been taught, however, that we get more returns from the application of commercial fertilizers if there is a fair amount of vegetable matter in the shape of humus in the soil. The bacteriologists tell us that with plenty of humus there will be a large number of bacteria in the soil, and they readily change the elements in the soil into condition for the plants to use. If humus is lacking, the number of bacteria is small and the elements in the soil are very slowly changed into a form that the plants can use, hence a very slow growth and small yield.

Stable Manure Best

It is very evident to anyone that we must have a supply of humus. From what source is the question, and this differs in different localities. Where stable manure can be had at reasonable rates it is doubtful if anything can take its place. It has been our idea for some time that a light application every year is better than a heavy application one year and then a number of years without. It produces a more uniform condition in which our friends, the bacteria, may work, and prepare a uniform amount of plant food in available form. Do not understand that we would not put on heavy application if there was a specially good opportunity. Experience teaches that it will remain effective a long time.

The writer has experience in two places on land that he has had in crops that were corrals 35 years ago and without any further application of fertilizer of any kind they are still very much more productive than the adjacent soil. Our experience has been that the application of barnyard manure remains effective longer here than in climates of summer rainfall.

Leguminous Cover Crops

No one questions the value of clovers, peas and vetches, where a good growth can be obtained. This largely depends on the amount of the water supply or the early rains to push the growth. On citrus orchards it should be plowed under the last half of February. On deciduous orchards it may go later.

In most places in Southern California if the plowing has to be preceded by a good irrigation to put the ground in condition to plow, the economic value of the crop is largely consumed in extra labor and costly water. In winters of good rainfall or cheap water the leguminous crops are of especial value. Yet it is doubtful if they are entirely sufficient except where they can be allowed to come up near mature growth. There is need of light applications of stable manure to give a sufficient supply of humus. This causes a much better growth of the vetches. On many orchards the supply of vegetable matter is so low that an application of stable manure is necessary to get a satisfactory cover crop to grow.

Sawdust

The writer has been asked about sawdust and planing mill shavings. We have applied them, both after being used as bedding and in fresh condition, with good results. The one thing to be made sure of is the thorough mixing with the soil. Several harrowings or cultivations before plowing under will mix the application with the soil so there will not be lumps of unbroken material.

Thorough Mixing Essential

This thorough mixing with the soil will be found very important. Any application to the soil that remains the first year largely in lumps will be of doubtful value. The nearer every separate particle of applied vegetable matter can be fully surrounded by soil the more effective it will be. Much of the value of vegetable matter of any kind is in the mellowing or mechanical effect on the soil. Unless the soil can be brought into close contact by thorough mixing, the good results are deferred.

Plowing of any application without thorough mixing is fatal to best results for another reason, that is, the application falls on the bottom of the furrow and very effectually prevents the turned over soil getting moisture from below. It gets very dry and the crop gets little from it. That being the part of the soil where a large part of the available plant food is found it is important to have it in condition to secure moisture supply from below. Very thorough mixing before plowing helps very much.

Handling Straw Mulch

For supply of vegetable matter to the soil, straw is an excellent application. If properly mixed the mechanical effect is excellent and lasts a long time in holding the soil in a mellow condition with reasonable cultivation.

Getting it into the soil well mixed is not so difficult as one would think before trying. Put the straw on the ground about six inches deep, about September, after a good irrigation and cultivation. At this season we have occasional desert air spells of two or three days when the straw gets very dry and brittle. Then in the afternoon of such days go onto the straw with team and harrow. Usually the teamster gets disgusted at first because it seems he is not doing any good. But never mind, keep going. Sometimes the harrow will be nearly

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two feet from the ground with the straw under it, but never mind that, keep the team going and the straw finally becomes well broken up and mixed with the soil, hindering the cultivator but little after the first time.

Emphasize the point of doing the work during the desert air spells when the straw is very brittle. It would be a serious undertaking any other time.

Seeds a Winter Crop

Generally a straw covering of this kind will give a very good seeding of grain which produces a heavy tonnage of green cover crop to plow under in February. The plowing under of this growth should be immediately followed by the disk cultivator, setting the disks straight. Go over it several times, the object being to get the soil well packed on cover crop to cause it to decay rapidly. If the disk is not used the upper soil dries out completely to the bottom of the furrow. The cover crop does not decay readily, and a number of difficulties become manifest.

Barley When Water is Short

Where the water supply is short the sowing of barley for a cover crop is probably as good as anything. In this method the extra nitrogen required will have to come in an application of nitrate of soda or lime, this kind of a cover crop being used exclusively for the humus supply to the soil.

A gardener in this locality is keeping ten cows for the purpose of enriching his ground. He buys nearly all his feed and sells the milk. The milk makes a small profit and all the droppings go on the ground to make a larger profit in the vegetables. One of the visible results is a good automobile recently purchased.

NEW CITRUS DISEASE IN FLORIDA

Readers of the Florida Grower will remember that some months ago we mentioned the fact that a new citrus disease had appeared in Florida, and that it had gained considerable headway before coming to the attention of the state inspector. When the seriousness of the case was recognized, Dr. Berger was sent to Texas to look into the matter, as it was fairly certain that the disease had been brought into Florida from that point, probably coming from Japan in the first place.

While Dr. Berger and those familiar with the case know that something must certainly be done to stop the spread of this tree pestilence, there was no money available that the state inspector of nursery stock could get from the state fund, for his office is allowed but a miserable $3,000 a year for salaries and expenses. It was here that the value of the Florida Growers and Shippers League as an organization was shown. Where they got the money we do not know, but it is sufficient to say that Dr. Berger was notified that the league would advance the state the money with which to make an immediate fight, trusting that it would be returned in time. This is a parallel case with that of the white-fly fight in California, the office of the agricultural commissioner having no funds for the purpose, but the California Protective League loaning $50,000, which was afterwards returned by the state.

The assistant chosen by Dr. Berger is Frank Stirling, of DeLand, and he has just written the state nursery inspector's office as follows:

"I have carefully examined some 50,000 nursery stock and several groves. Up to the present time I have found the canker in three different places outside of the two we already knew about. On one of the originally infected places the owner has destroyed every infected plant in his nursery, and has cut back the balance, even though not yet showing signs of infection. In another place I found 15,000 pomelo buds and seedlings all affected. This man has already cut back, according to his estimate, over $8,000 worth of stock, and is painting stubs with lime and bluestone mixture. In another nursery I found 20,000 trees all affected. They will be treated. On one ten acre grove I found all trees affected, and they have been cut back and painted —750 trees in all.

"The people here are taking this matter better than I expected they would, and all are united in trying to eradicate the infection, realizing that unless they do their business will be ruined utterly."

Our representative has just returned from the infected district, and the following has been written by him on the subject:

Citrus Canker Investigations

"Get busy and eradicate the new disease," seems to be the slogan of the growers in the Redland district of Dade County, where Frank Stirling is working under the directions of Chief Inspector of Nursery Stock E. W. Berger. That is the slogan of 98 per cent of the growers seen in a four-day canvass of the infected territory, the other two per cent will tell you they are for the elimination of the canker, too, but differ with the majority in this way.

One says citrus canker is prevalent throughout Florida, that he has seen it in Orange County for years, that the present dry weather causes it to spread more rapidly and do more damage, that the citrus canker, or Texas canker, as they call it locally, is nothing else but the lemon scab, and then he hints at jealousies on the part of growers elsewhere because of the rapid development going on in Dade County. The fact is, however, at the time the writer interviewed him he had never seen any citrus canker, neither had he read bulletin No. 122, so was only expressing his own personal views. He had a right to do this, whether he was right or wrong, and was exercising that right, so he claimed.

The other case was where a grower expressed himself as being afraid that the investigations carried on by the state would lead to more laws, laws that would interfere with the property rights of the growers. He claimed the right to take care of his grove as he thought best without any interference by the state or any one else. Unlike most people who argue that way his grove and home grounds showed good care. When questioned about his views on the absent grove owner, who neglects his grove to the detriment of all groves in a community, he suggested taking their property away from them, but had no mode of procedure. He was against any laws or compulsion in enforcing care for groves, as he was afraid of grafters securing control of the work.

The entire Redlands district is excited about the citrus canker investigations. Wild rumors are circulated about the ravages of the disease. In one store there was a discussion about a 60-acre bearing grove being condemned by the inspector and or-

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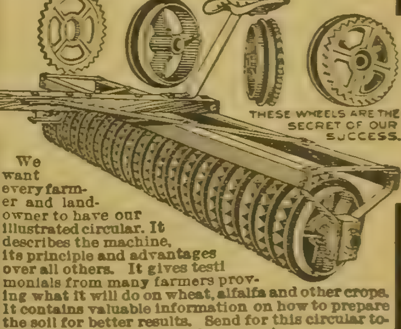
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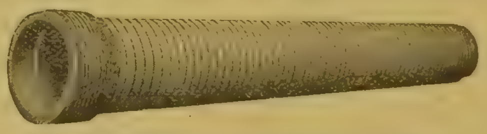

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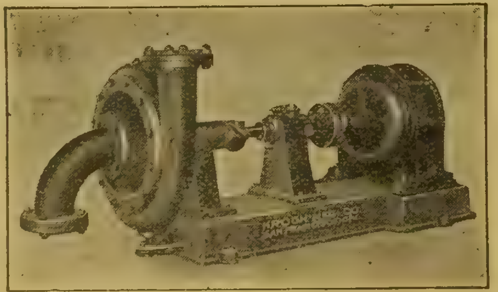

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dered pulled up by the roots and destroyed. There is no such size grove in that neighborhood and the inspector had ordered no property destroyed.

Few of the growers understand how the present work for the elimination of the citrus canker was being carried on; some gave credit to private individuals; some the state, while others thought it was the United States government. Some of the better posted ones who know the Florida Growers' and Shippers' League is paying the bill and Chief State Nursery Inspector E. W. Berger is directing the work, are loud in their praise of the league.

One grower stated he never imagined there was such a wide field for the Growers' and Shippers' League when he joined and he certainly was getting his money's worth now.

Frank Stirling, who is the deputy inspector in charge of the investigations in the Redlands district, stated, so far, all cases of citrus canker he had discovered, some 10 in number, could be traced through the moving of nursery stock, or the carrying of the disease on the nursery workers' tools. He expressed himself as very well pleased with the cooperation and assistance rendered him by every one he had come in contact with in his work.—Florida Grower.

Deciduous Fruit Culture

CULTURE AND HANDLING OF SHIPPING PLUMS

(Continued from Page 171.)

when the ground is absolutely dry. Thorough cultivation must be practiced during the life of the tree.

For planting the ground should be marked off to require from about 90 to 100 trees per acre, the lesser number being preferable. This is usually done with a wire about 200 feet long having a button of solder at every place where a tree stake should be located.

Holes should be dug of ample size to allow plenty of room for the placing of the roots without crowding, and the soil well settled around each tree either by tamping with the feet or by the use of water. The tree should be topped at once to a height of about 16 inches.

It seems almost superfluous to urge the use of very great care in every act, but it is absolutely necessary to success. In many localities it is necessary to protect the bodies of the young trees from the hot rays of the sun during the first season. This is best done by the use of shakes or some of the excellent manufactured tree protectors to be found on the market.

During the winter after the trees have been planted one year they should again be pruned back about one-half or two-thirds of the season's growth, leaving about three or four limbs in such a position as to form a good strong head on which to build your future tree. Until the tree comes into bearing the pruning must be done with the main idea of forming as strong and well shaped a tree as possible, and care must be exercised to keep from leaving the growth too thick or leaving too much wood in the tree.

After the tree has come into bearing and the crop is set the most important step is thinning. Without proper thinning you cannot hope to stand the strong competition of the present day. With some of the new and improved varieties it is necessary to thin two or three times.

Unless the laborer doing the thinning is an old hand at the business, it is hardly safe to let him look at the ground under the trees after thinning or he will never get enough off. Like everything else, thinning requires good judgment and experience.

As the culls from shipping are usually a dead loss, the pruning and thinning should be done in such a manner as to reduce the per cent of culls to a minimum.

As to the state of maturity for picking for eastern or European shipment, no ironclad rules can be laid down. It is another case where the exercise of good judgment and experience is necessary, as what is proper in one locality would mean failure in another. Great care must be exercised not to disturb the bloom on the fruit in handling. Great variety of opinion exists as to the proper ripeness at which to pick the different varieties, also the same variety in different localities.

The usual practice by the inexperienced is to pick too ripe, and by those after the early markets, to pick too green. The matter of picking must be settled by experience with each variety in each locality. Take for instance, the Kelsey plum. It will not color on the tree in the Vacaville district until too ripe for shipment, but will color well en route if picked hard. On the other hand the same variety in the Lodi section will show a handsome color and still be firm. The Climax, when picked straw color or with slight pink at the apex, will ripen and color to perfection en route. The Tragedy may be picked as soon as color begins to show, or may be left on the tree until almost fully colored and still go the long route and arrive in perfect condition. With the long list of varieties now grown in this state it would be useless to even attempt to try to describe each.

Plums are usually packed in five-pound baskets, four baskets to a crate. The smaller varieties are usually packed in three layers 4x5 or 5x5, and in some instances with the very early ones as small as 5x6. The larger varieties are usually packed 4x5 and 4x4, and in some cases 3x4. In the extremely large sizes they are frequently wrapped in individual papers instead of being placed in layers between long strips of paper, as is the case with the smaller sizes.

The packing should be done in such manner that every plum is keyed secure in place, but not bruised, and nothing but perfect fruit packed.

The cover must not press fruit sufficiently to bruise same, but must bear firm enough to hold fruit from being displaced by rough bumps by the train en route.

For lack of time I am compelled to omit such important features as fertilization, spraying and insect pests, and will give some time that might have been devoted to those subjects to the subject of varieties, which is one of the most important features of the plum business at the present time.

The man in business tries to follow the lines of least competition. So with the plum grower. During the last few years so much advance has been made in the creation of new and improved varieties that it has stimulated the grower's desire to get his plums in the market when it is as bare of fruits as possible. Under existing conditions this is secured by being the first on the market. Many standard varieties now considered comparatively old will always command a place in any market, such as Tragedy, Burbank, Wickson, Climax, Hungarian, Grand Duke, Giant and Diamond. But many new and valuable varieties are now competing for first place on the list of good shippers. Prominent among these are the Beauty, Formosa, California Blue or Vacaville, the Gaviota and many others, some yet unnamed, which I am not at liberty to discuss. One very promising new variety originated by my neighbor, Mr. Burton, which he has called the Earlianna, was entirely harvested by the first of June. It is a good-sized plum of splendid color and shape and an excellent plum for the table, a good bearer and the best all round early blue plum. In conversation with a neighbor recently who is growing over 100 different varieties, he remarked that he would confine his energies to but few, such as Beauty, Formosa and perhaps one or two others, and after inspecting his orchard his judgment seemed to me to be wise.

From our experience in the past we feel that the possibilities for improved varieties are almost unlimited. As we are now growing many times as many varieties as are needed, and so many as to keep the buyers at sea as to what is being offered them, I think it wise to eliminate all of the second and third rate varieties, except where absolutely necessary to retain them for pollenizing better ones. On account of the great variation in the time of blossoming in different seasons, varieties requiring special pollenization are rather unsatisfactory.

A very unsatisfactory condition obtains on this coast in the naming of fruits. It is bad enough to have to be confused with a thousand or more distinct varieties, but when we add to this trouble by insisting on calling some well defined variety by some four or five different names, we are surely in need of a guardian. If this matter could be handled through the American Pomological Society, or some state society in connection with the national society, it seems to me it would simplify one of our most perplexing difficulties.

And now in conclusion my advice to those contemplating the shipping plum business is to go slow and to investigate thoroughly first and be satisfied with nothing but the best conditions, then with care and good judgment you are sure of a success that will net you a handsome income. You now have the United States and Canada for market, as no other portion of America grows successfully the fine varieties produced on the Pacific coast. And as soon as the Panama Canal is opened you may annex the markets of Europe with an excellent refrigerator steamer service direct from your own great city of San Francisco.

Music is a kind of inarticulate unfathomable speech, which leads us to the edge of the infinite and lets us for a moment gaze into that—Carlyle.

CALIFORNIA APPLE SHOW

The California apple show, which will this year be held in the city of San Francisco, will be very much like its predecessors along many lines, but in one particular there is to be a new feature. Mr. Perkins, the manager, wants every housekeeper in California to tell what can be made from an apple. He grants that California apples will make good cider and some other things, but what are these other things?

He wants recipes for pies made from green apples and dried apples; recipes for apple whip, for cobblers, jellies, jams, preserves, salads—anything and everything that is made of apples and is good to eat. As everybody knows apple pies are not all alike, and if the California apple show can put into the hands of the wives of California a recipe for the very best apple pie that can be made, the result is going to be an increase in the demand for apples. That's the Perkins idea.

President O. D. Stoesser of the Watsonville Apple Annual Association is going to appoint a committee to award prizes to the authors of the best recipes. An effort will be made to persuade some of the famous chefs of San Francisco to serve on this committee and to experiment with the recipes in their perfectly equipped kitchens. The prize winning recipes will be published in the handsome apple show program, which is to be made in the shape of a huge bellflower apple and printed in the natural colors.

FIRST PRINCIPLES OF SOIL FERTILITY

First Principles of Soil Fertility, by Alfred Vivian, professor of agricultural chemistry, Ohio state university, published by the Orange Judd Company, New York, at $1.00 net. The Cultivator will be glad to secure the book for its subscribers at the above price or, including a year's subscription to the Cultivator, at $1.85.

No demand for information in agricultural matters is more insistent than that for the very latest and best regarding soils and their improvement. Perhaps no question has been studied more than this one and perhaps none is farther from solution. If all farming lands were of the same texture, with the same sub-soil, the same moisture conditions and the same chemical content, our fertilizer questions would be very simple, but as that will never be, the only solution for soil fertility problems is study. The best book of all is that of nature and of experience with the individual soils the farmer has to deal with, but there is today more interest in good books touching upon physical and chemical conditions of soils than ever before. An excellent aid to this study is First Principles of Soil Fertility. It is true to name. It deals with much that is elementary but in such an attractive way that all will find its reading most interesting.

The book is divided into 22 chapters. Its trend may best be given by a few of the headings: Atmosphere as a Source of Plant Food, Soil as a Source of Plant Food, Soil, Origin, Tillage, Drainage, Fallowing, Humus and Green Manuring, Crop Rotation, Value of Manures and Chemical Fertilizers. Mixed and simples are both discussed. There are tables giving fertalizing constituents, and an excellent index completes the book. Every student of soils will find it most interesting.

CALIFORNIA FRUITS

California Fruits and How to Grow Them, by E. J. Wickson, A. M., published by the Pacific Rural Press, San Francisco, $3.00 net. The Cultivator will be glad to secure the book for its subscribers at the above price.

The first edition of this book, dedicated to Professor Wickson's associates of the state horticultural society, came from the press a quarter of a century ago. We still have a copy of this first edition in the Cultivator library. It is almost as large a book as the latest or seventh edition or the nineteenth thousand, which is demanded by the ever increasing hosts of fruit growers of the Pacific Coast. Of course, this latest edition follows the same general line as the first yet the many changes in text and illustration make it practically a new book. It is divided into ten parts, with one to a dozen chapters in each part. Part one is general, touching upon climate, soils, native or wild fruits, introduction of Mission fruits and new fruit varieties. Part two is all cultural and ranges through clearing of the land, planting of nurseries, budding, grafting, soil preparation, pruning, cultivation, fertilization and irrigation. Part three takes up deciduous orchard fruits grown on the Coast. To name the headings of each chapter would be to give practically an entire list of fruits grown in this state. Part four is on the grape. It treats on varieties, propagation, planting, pruning and general care. Part five has to do with citrus fruits and other semi-tropicals. Part six is given entirely to small fruits. Seven to nuts. Eight to fruit canning, crystallizing and preserving. Nine to fruit protection from insects, diseases, animals, frosts and wind. Ten is miscellaneous, a discussion of utilization of fruit wastes and last, and most valuable of all, is an excellent topical index.

Prof. Wickson's life has been almost entirely in California. He is too well known and his ability as a writer so well recognized that commendation of this book is unnecessary, but we believe every orchardist should have a copy, and even if he has one of the former editions there is so much that is new in the book that it should be added to every library.

THE ARROYO GRANDE FARMERS' UNION

The Arroyo Grande Local No. 145, Farmers' Educational and Cooperative Union of America, which was organized last January, now has some 60 members and is in good working condition. Already it is discussing the cannery proposition and it is thought there are fair prospects of putting it through. It has been decided to incorporate the union so that business may be done in a more regular way and the products of the members may be handled with more profit. The union will also purchase supplies, one of the purchases already made being two cars of wheat which has been distributed among members.

On August 12 the union held its first annual picnic at the beautiful camp grounds on the hills above town. Almost all the members and many friends were there. A good program of music and addresses and, of course, the usual basket luncheon, were features. Secretary Millard of the state union was the principal speaker.

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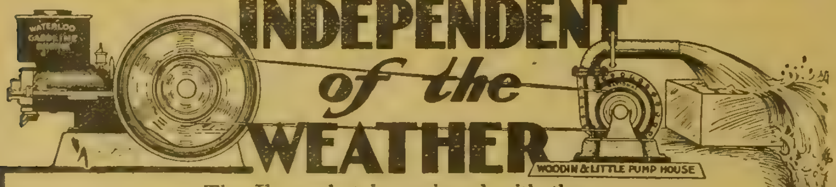

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Small Fruits and Vegetables

CABBAGE WORMS AND CABBAGE APHIS

By M. A. Yothers, Assistant Entomologist, Washington State Experiment Station.

Cabbage worms and cabbage aphis, or lice, are found in more or less destructive numbers wherever cabbage and other cruciferous crops, such as turnips, rutabagas, cauliflower, etc., are grown. Some seasons they are much more destructive to these crops than others, owing to various causes, such as the weather conditions or the presence or absence of the various parasites and predaceous enemies, which sometimes keep them reduced to a minimum.

The green caterpillars, or cabbage worms, found on cabbage and allied plants are too well known to need any description. They develop into the common white, gray or orange butterflies with small dark spots on their wings. They are seen frequently during the summer flying about the garden and clover and alfalfa fields. The butterflies lay the eggs on the cabbage, which hatch into the caterpillars.

The state experiment station at Pullman advises that the best method of controlling these worms is to spray the plants before they are half grown with arsenate of lead and soap, prepared as follows: arsenate of lead (paste), three ounces; soap, one-half bar; water, four gallons. This spray should be applied whenever the worms become abundant enough to justify it. Usually an application about the first of July and another two or three weeks later will be sufficient for early cabbage. Late cabbage may require an additional application later.

Another thing about answering advertising in this paper; it is always well to mention that you saw the advertisement in these columns. This is a sort of introduction for you—a letter of introduction from us to the advertiser.

The cabbage aphis are also very well known to every gardener. They live over winter in the egg stage or as mature aphids on the old plants left in the garden during the winter. A great many generations are produced during the summer and fall, so that by late summer those plants only slightly infested in the spring may be seriously injured by these pests unless destroyed by their parasites or predaceous enemies. They are often kept in control by the ladybird beetles and the larva of the Syrphus flies.

The best method for controlling the plant lice is to spray the plants with tobacco and soap mixture prepared as follows: Blackleaf-40, two tablespoons; soap, one-half bar; water, four gallons. The soap is necessary in order to make the spray spread evenly and penetrate the mealy covering of the lice.

In as much as both worms and aphis are nearly always present at the same time, it is often desirable to spray for both, and this can be done with a combined spray prepared as follows: Blackleaf-40, two tablespoons; soap, one-half bar; arsenate of lead, four ounces; water, four gallons..

SWEET POTATO DISEASES.

The plant pathologists of the department of agriculture estimate that the yield of sweet potatoes is reduced approximately $10,000,000 annually by the ravages of several diseases, notably the black-rot, stem-rot and foot-rot, all of which may be prevented by the use of proper precautionary measures. In spite of this large loss of money, the crop of 1913 will probably amount to nearly 65,000,000 bushels with a value of $40,000,000. Two of these diseases, the black-rot and stem-rot, are well known to most farmers who grow sweet potatoes.

Black-Rot.

This disease is nearly as widely distributed as the crop itself. It affects the plant from a little above the soil down into the crown, causing a black, rotted appearance of the affected part of the stem. In the winter it is common in many storage houses and is readily recognized by the black, circular, somewhat sunken spots, which render the potatoes unsalable.

Stem-Rot.

Although not quite so widely distributed, stem-rot is equally as destructive. It is caused by an organism which enters the vines, stems and roots of the plant and fills the water-carrying vessels. It enters the potato at the stem end, where it appears as a blackened ring just beneath the skin. In fields where this disease occurs, plants can be seen throughout the summer wilting, turning yellow, and gradually dying.

Foot-Rot.

Another disease, less widely distributed but bad in the localities where found, kills many plants in the fields by destroying the bark on the stem a few inches above the hill.

These diseases are found both in the hotbed and in the field and may be carried through the winter on the seed potatoes and in the soil. Infection may therefore result from the use of diseased potatoes for seed or from the use of infected soil in the hotbed or field where the slips are grown and transplanted. With these facts in mind it is clear that a clean crop could be grown if disease-free seed is used and bedded in disease-free soil and the slips coming therefrom planted on ground where the disease is not present. These three requirements can be fulfilled by selection of seed, by disinfection of soil in the hotbed, and by crop rotation.

Seed potatoes for the new crop should be selected preferably in the fall at digging time and carefully examined again in the spring when starting the hotbed and all discarded that show any symptoms of disease. Before any seed potatoes are selected from a hill, the stem just above the potatoes should be split open to see that it is not blackened inside. No potato should be taken for seed from a hill which has the stem blackened inside. The seed potatoes should be stored in crates or baskets and kept separate from the general stock. Seed potatoes should be disinfected with a corrosive sublimate solution, one part of corrosive sublimate to 1000 parts of water, for about five to twenty minutes. They should then be rinsed in water and thoroughly dried. It is preferable to disinfect in the fall on a warm, clear day.

With clean seed potatoes it is essential that the hotbed be free from parasitic organisms. Great care should therefore be exercised in its preparation. Before the soil is put into the bed, the cement, boards, or whatever is used in the construction should be thoroughly sprayed with a solution of five pounds of copper sulphate to 50 gallons of water and then with Bordeaux mixture or whitewash. In some localities where these diseases are very prevalent it is almost impossible to find soil that is not infected. Fields which had not been grown to sweet potatoes for nearly 40 years have given an infected crop when clean slips were used. Where such a general infection has occurred, the soil is light and it is probable that the organisms were disturbed by the wind. In view of these facts it is advisable to disinfect all hotbed soil. This can be done by treating it with a solution of formaldehyde, one pint of formaldehyde (40 per cent) to 24 gallons of water. This chemical is cheap and can be purchased at almost any drug store. When the soil is to be thus treated it should be placed in a tight box or other receptacle and enough of the solution added to soak it thoroughly. The application should be made at least two weeks before the soil is to be used, in order to allow the formaldehyde to evaporate. An occasional stirring of the soil will assist in the escape of the gas. Disinfected soil should be carefully protected to prevent infection before it is used. All instruments used in handling sterilized soil, such as the wagon box, shovel, etc., should be disinfected.

It is believed by some farmers that better and stronger plants can be secured by using manure as a source of heat in the hotbed. Others insist that equally good, if not better, plants can be grown in a fire bed. From the standpoint of disease there is far greater danger in the use of manure, especially if it is produced on farms where sweet potatoes are grown. It frequently happens that farmers are careless about the disposition of decayed sweet potatoes and feed them to hogs or chickens or, more often, throw them on the manure pile. From there they are carried to the hotbed and infection of the young plants becomes easy. It is urged that all refuse sweet potatoes be cooked or burned and not thrown where they will be scattered in the manure and hauled on the farm or used in the hotbed.

It is not known how long these diseases will remain in the soil without the sweet potato as a host. It is advisable, however, to follow a system of crop rotation that will not bring this crop on the same ground oftener than once in three or four years. It is certain that the crop will not be free from disease so long as the organisms are present in the fields. The only way to get them out of the field is to starve them out by planting crops on which they can not live. Experiments, however, have shown that the percentage of diseased plants is much reduced by planting healthy slips, although the soil may be infected. This fact alone justifies all the precautions necessary to grow healthy slips, even though the soil on which they are planted is diseased.

The Ornamental Garden

RURAL SCHOOLGROUNDS

Written for the California Cultivator

By E. Braunton.

Civic interest and civic effort should everywhere center upon the local schoolgrounds, but nowhere is special attention so necessary as in strictly rural communities, especially where the school yard is some distance from the nearest home.

Where there are several close neighbors these may be depended upon to cement and foster improvement and embellishment sentiment through selfish interests or even through a laudable desire for neighborhood improvement, but when a school is somewhat remotely situated, what is everybody's business is nobody's business.

So many times have I written down this central thought and self-evident truth that were the needs not most pressing I should hesitate to again refer to it. But it is indeed strange and a sad commentary on the frailties of the most enlightened, most advanced race on earth that the only piece of property in a community in which all have common ownership and in which all should have equal and unquestioned interest should be the most neglected. Not infrequently rural schoolgrounds are so bare and unattractive as to be a positive reproach to every resident of the district.

When we gravely consider this matter it must occur to some, if not all, that during school years the most impressionable period of a child's life is passed. If this be true, and I believe the statement will not be questioned, should we not seek to imbue the child with a love for the beautiful? The plastic mind of the juvenile is then figuratively potter's clay. Shall we awaken and encourage and cultivate its finer sensibilities in this direction or shall we allow them to become atrophied so that in mature years the beauties of nature do not appeal to these unfortunates whose early education, in the highest sense, we are at present neglecting? To come down to cold facts, are not our lives too sordid in the attitude we bear toward the local schoolgrounds? From an economic viewpoint it pays to bear our just share in the beautification of the school premises. Not all can afford ideal home surroundings because of the attendant expense. But a small portion of the sum necessary to finish and maintain a high standard of gardening at home, if contributed by all, would so embellish and permanently improve the local schoolyard that every resident would have just cause for pride whenever his thoughts or his eyes wandered in that direction. Nay, more; it would make it so attractive, if the sum total was wisely expended, that not only the local community as a whole, but people from far and wide, would visit it again and again because of its wonderful and impressive charms. All this may sound poetic, and some will say the scheme is impractical, but I know of schoolgrounds within a few miles of Los Angeles that are more richly planted, more regally maintained and far more attractive than any private garden within a radius of 10 miles. That's the kind of a community to live in. During the last

(Continued on Page 191.)

Books

This list of helpful, instructive and interesting books is prepared by us with the purpose of enabling the Cultivator readers to supply themselves at the lowest possible cost. The great value of many of these is so well known as to need no comment from us. Some of the new books which we have added to the list this year deserve special mention. "Co-Operation in Agriculture," by G. Harold Powell, should be in the hands of every producer of farm products. "Farm Sewage," by Santee, will aid many in solving a perplexing problem. "Farm Manures," by Thorne, is decidedly valuable. We state sincerely that no orchardist can afford to get along without "The Pruning Book," by Bailey. We have had much inquiry for a book on keeping farm accounts—we can supply a good one now. The imported book, "Insecticides, Fungicides and Weedkillers," by Bourcart, is a marvel of completeness. The rapidly increasing use of gasoline engines, automobiles and tractors by the farmers has demanded reliable treatises on these subjects. "The Gasoline Engine on the Farm," by Putnam, "The Modern Gasoline Automobile," by Page, and "Traction Farming and Traction Engineering" are exceptionally complete, well illustrated and easily understood. Don't overlook the "Cement Workers' Handbook"—it's "worth its weight in gold." Every book on this list has the endorsement of the California Cultivator.

	Book Alone.	With Cultivator.	Free for the following number of new Subscribers.
American Grape Growing, by Hussman	$ 1.50	$ 2.25	3
Arid Agriculture, by Buffum	1.50	2.35	3
Book of Alfalfa, by Coburn	2.00	2.75	4
California Soils, by Prof. Gilbert E. Bailey	1.50	2.20	3
Cyclopedia of Agriculture, by Bailey	20.00	20.00	40
Cement Worker's Handbook	.50	1.30	1
Citrus Fruits and Their Culture, by Hume	2.50	3.25	5
Co-operation in Agriculture, by Powell	1.50	2.40	3
Domestic Water Supplies on the Farm, Fuller	1.50	2.30	3
Date Growing, by Popenoe	2.16	2.85	4
Feeds and Feeding, by Henry	2.25	3.00	5
Farm and Garden Rule Book, by Bailey	2.17	2.90	4
Farm Sewage, by Santee	.50	1.40	1
Field Manual for Beet Sugar Growers, Adams	1.00	1.85	2
Fruit Growing in Arid Regions, by Paddock	1.50	2.40	3
Farm Manures, by Thorne	1.50	2.25	3
Farm Friends and Farm Foes	.90	1.85	2
Farmers of Forty Centuries, by King	2.15	2.95	4
Fertilizers, Source, Purchase and Use (Smith)	1.00	1.90	2
Garden Helps, by Hall	.75	1.65	2
Gasoline Engine on the Farm, by Putnam	2.00	2.60	4
Garden Book of California (Ornamental) by Angier	2.00	2.85	4
How to Keep Farm Accounts	1.00	1.75	2
Hand Book for Farmers and Dairymen, by Woll	1.50	2.30	3
Irrigation and Drainage, by King	1.50	2.40	3
Insecticides, Fungicides and Weed-killers	4.50	4.75	9
Modern Gasoline Automobile, by Page	2.50	3.10	5
Milk and Its Products, by Wing	1.50	2.40	3
Making the Farm Pay, by Bowsfield	1.15	1.95	2
Nursery Book, by Bailey	1.50	2.40	3
Practical Garden Book, by Bailey and Hunn	1.00	1.90	2
Primer of Irrigation, by Anderson (paper cover)	1.00	1.85	2
Pruning Book, by Bailey	1.50	2.40	3
Story of the Soil, by Hopkins	1.50	2.35	3
Soils, by Hilgard	4.00	4.75	8
Swine in America, by Coburn	2.50	3.25	5
Traction Farming and Traction Engineering	1.65	2.25	3
Science and Practice of Cheese Making	1.75	2.50	4
Soil Fertility and Permanent Agriculture, Hopkins	2.70	3.50	6

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Minorcas—Every Comb and Color	.50	1.45	1
Practical Rabbit Keeping	1.25	2.10	2
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Poultry Houses and Fixtures	.50	1.40	1
Pigeons—All About Them	1.00	1.90	2
Reliable Poultry Remedies	.25	1.20	1
Rhode Island Reds	.75	1.65	2
Turkeys	.75	1.65	2
Western Poultry Book, by Mrs. Basley	1.00	1.75	2

BEES

	Book Alone.	With Cultivator.	Free for the following number of new Subscribers.
A B C and X Y Z of Bee Culture	$ 1.50	$ 2.35	3
Beekeeper's Guide, by Prof. Cook	1.20	2.00	3

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Farm Economics

FIVE RULES FOR BORROWING MONEY

Five rules designed to convince farmers that there is no magic about credit are set down in Farmers' Bulletin 593, "How to Use Farm Credit," which the department has just published. Unless the farmer who is thinking of borrowing money fully understands these rules and is willing to be guided by them, the government's advice to him is "Don't." As it is, there are probably almost as many farmers in this country who are suffering from too much as from too little credit.

Of these rules the three most important are:

1. Make sure that the purpose for which the borrowed money is to be used will produce a return greater than needed to pay the debt.

2. The length of time the debt is to run should have a close relation to the productive life of the improvement for which the money is borrowed.

3. Provision should be made in long-time loans for the gradual reduction of the principal.

The first rule is, of course, the key to the wise use of credit. Between borrowing money to spend on one's self and borrowing money to buy equipment of some sort with which to make more money there is all the difference between folly and foresight, extravagance and thrift. If the money is borrowed for a wise purpose it will produce enough to pay back principal and interest and leave a fair margin of profit for the borrower into the bargain. If it is borrowed for a foolish purpose it will produce nothing and consequently there will be nothing with which to repay the loan. From this point of view it matters comparatively little whether the interest be high or low. It is the repayment of the principal that is the chief difficulty.

Keep up with the march of events and the progress of invention by noting the new appliances advertised in this paper from time to time. The advertising columns of the farm paper are a safe register of progress in the world of agriculture.

Rules 2 and 3 deal with the most satisfactory ways of repayment. Underneath them both is the same principle: The loan must be repaid with the money it earns itself. For example, if the money is used to buy a machine that will last 10 years, the machine must earn enough in that time to pay for itself or it never will. The loan, therefore, should be entirely repaid before the 10 years are up or the farmer will lose money on the transaction, paying out interest for no benefit in return. On the other hand, if too early a date is set for repayment, the machine will not have had sufficient opportunity to make the requisite money and the borrower may have difficulty in raising it elsewhere. Rule 3 provides for some form of amortization, the system by which the principal is repaid in installments so that the amount of the loan is continually diminishing and in consequence the interest charges also. Such a system is quite feasible when the loan is really productive, when it returns to the borrower a definite revenue each year. Tables showing the payments required to pay off principal and interest in varying periods of time are appended to the bulletin and are recommended to the serious consideration of everyone who contemplates borrowing money. The bulletin also advises the farmer to secure the lowest possible interest. At first sight this seems too obvious to be worth mentioning. Of course, the interest should be as small as possible. Everybody knows that—except the lender. But if the other rules are observed, if the borrower manages his financial affairs soundly, he will be surprised to find how much easier it is to obtain favorable terms. The right kind of lender does not want to foreclose mortagages; he wants his money back with a fair profit, like any other merchant. For money that is borrowed wisely, for money that is sure to be repaid, he charges low interest.

This, in fact, is why the government has published these rules for borrowers. It is not so much a matter of driving a shrewd bargain as it is of observing a few fundamental principles which alone can make credit a blessing and not a curse.

SAN JOAQUIN IN LINE

One of the counties which has appointed a county farm adviser or, using the appellation recommended by the department of agriculture, a county agricultural agent, is San Joaquin. Mr. Frank F. Lyons has been appointed and a farm bureau organized. At a recent meeting of the bureau it discussed plans of work. There were present Ed Powers of Manteca, president; J. A. Aggeler and R. G. Cople of Roberts island, Edgar Davis of Linden, Harry Bailey of Lodi, J. P. Watkins of Ripon, E. A. Clow of Escalon, Asa Clark of Stockton, Irving Webster, secretary, and Farm Adviser Frank F. Lyons. Mr. Lyons is already engaged in active work in various parts of the county.

TEN FACTORS OF PROFITABLE FARMING

The ten essential factors of profitable farming as recently set forth by Dr. W. J. Spillman, of the federal office of farm management, are:

1. Low real-estate prices for the land cultivated.
2. Production of commodities for which the supply is less than the demand.
3. Management of the business on as large a scale as capital and managerial ability will permit.
4. Production of commodities of the highest quality.
5. A reputation for reliability.
6. Location for good markets available, and ability to buy and sell profitably.
7. Keeping only animals of highest productive capacity.
8. Large yields with relatively little labor and fertilizer.
9. Production at low cost.
10. Production of staple commodities for permanent profits.

Profit in the Poultry Yard

"FIRST AID" TO THE SICK HEN

Written for the California Cultivator by Jean A. Koethen.

The subject of the diseases of fowls is a painful one to me, yet it seems to be just the one that most people want to hear about. There ought not to be any sick fowls. The natural condition of a fowl is health. A sick fowl is an anomaly. She should not exist. She would not exist if man, who has been placed in control of her, used common sense.

I am not a Christian Scientist, but I do believe in fresh air and sunshine and exercise and pure food and a simple, wholesome life for man and beast. But it's no use talking, of course. As long as there are people in the world who insist on wearing pumps and silk stockings in the rain, or eating pie at bedtime, or on shutting up hundreds of human beings at once in a room without a crack open to let in a little of God's pure air, we must expect fowls to be kept in overcrowed, filthy quarters, fed on indigestible food, and deprived of the exercise they want and need.

A wag wrote to the editor of a country paper: "Dear Sir: Every morning when I go out to the hen house I find some of my hens under the roosts, with their toes turned up, stiff as buckram. Kindly tell me what the matter is." The editor replied: "We think your hens must be dead, but there isn't much that can be done. They will probably stay that way quite a while."

The moral of this story is: After asking what killed them. They are your fowls are dead it isn't much use dead. That ends the matter. But how about those that are still alive and healthy? The time to lock the door is before the horse is stolen. Be alive to the condition of your fowls, prevent illness by all possible sanitary and hygienic precautions, but if it does appear be ready to combat it instantly by the use of the simple remedies which are at every one's disposal. Doctoring, as we use the word, is a waste of time in most cases, but it is often possible, by the use of the right treatment at the right time, to head off disease and prevent contagion.

Signs of Disease.

The poultry keeper should train his eye to discern any lapse from health on the part of a single one of his fowls; the dark or pale comb, the lagging step, the ruffled plumage, the "humped up" attitude, the failure to be on hand at meal time, are all indications that something is wrong. Now is the time to find out what is the trouble. Don't wait till they are past help.

Diseases of fowls, like those of human beings, may be classified as acute and chronic. The chronic disease comes on slowly and gradually; the only symptom at first may be the color of the comb or a disposition to stay on the roost. Acute disease comes on more rapidly. Sometimes the only symptom is a dumpiness or drowsiness that increases till the fowl dies.

The hen's comb has been called her "certificate of health," so unerring a signal does it display as to her physical condition. An acute disease like roup does not, of course, immediately change the color of the comb, but a bright red comb can usually be counted on as an indication of vigorous health. Sometimes a pale or shrunken comb merely indicates that the hen is not laying, but a hen with such a comb should always be watched. A pale comb, combined with diminishing weight, ("going light"), suggests tuberculosis, and should subject the fowl to careful investigation, followed, in most cases, by speedy elimination. A dark comb means liver trouble, and the case should be taken in hand before further symptoms develop. When warty-looking excrescences appear of the comb and about the head, chicken-pox may be safely diagnosed.

Preliminary Treatment.

As soon as signs of disease are noted, these precautions should be taken:

1. Isolation. Remove all fowls that are in the slightest degree out of condition from the general flock at once. The trouble may not be contagious, but then again it may. In any case the sick bird is a menace to the health of the flock and can not be satisfactorily treated without removal. On a large poultry plant it is wise to have a hospital pen for birds that may be ailing. Where only a few are kept there is usually an empty pen or coop that can be used. Where the whole flock is affected, as happens sometimes with roup or chicken-pox, only general treatment of the simplest sort can be given.

2. A Purgative. This matter seems almost too simple to mention. Nine times out of ten when a fowl is sick the trouble is in the digestive tract, and a teaspoon of castor oil or Epsom salts may be all that is needed. Some expert poultrymen give their fowls Epsom salts regularly in the mash once in so often, and some give a special "course" of salts for a month in the spring to cleanse the system after the heavy feeding of the winter and prevent liver trouble.

3. Fasting. Usually a sick bird does not care to eat, but it is a good plan, especially where the dark comb indicates a bad liver, to keep all food away for a day or so. If the bird seems hungry let it out on the lawn or the alfalfa patch. Green range is the cure for many ills.

Now, as to the treatment for the diseases which are most common in a farm flock: Roup and kindred troubles, such as catarrh and swell head, are due mainly to overcrowded, badly ventilated sleeping quarters or to dampness somewhere. See first of all that conditions are remedied. Put the sick bird in an open front coop and try the potassium permanganate treatment, which is as follows: Press the nostrils together between thumb and forefinger two or three times in the direction of the beak, and press upward between nostrils and eyes to loosen the discharge, then plunge the bird's head 20 or 30 seconds in a one to two per cent solution of permanganate of potash. Give this treatment twice a day till all symptoms have disappeared.

For a simple cold indicated by running at eyes and notrils and sneezing, there is nothing better than a quinine capsule for two or three days, half a grain for half grown stock, a whole grain for adult fowls. Quinine is also sometimes effective in roup and bronchitis.

For bronchitis, which is known by a rattling or whistling sound in the throat, make a mixture of olive or castor oil, turpentine and syrup, or wine of ipecac in the proportion of a teaspoon of oil to 10 drops of turpentine and five drops of ipecac, and give two teaspoons two days in succession. I have never tried this, but it is recommended by Director Quisenberry of the Missouri station, and the ingredients are such as would be most effective with children, so why not with fowls?

For chicken pox, which is generally mild in California, anointing with carbolated vaseline may be sufficient. If it is not, soak the scabs with warm soapsuds till they can be picked off readily, and touch the sores lightly with a feather dipped in creolin.

For liver trouble cut out the laying mash and give bran, hard grain (no corn), and plenty of green feed. Put the fowls on range if possible. If not, make them scratch in deep litter for every grain.

Scaly leg is a filth disease pure and simple and has no place anywhere. It can be cured by rubbing with lard and sulphur.

Diarrhoea is due to improper feeding, foul water, unsanitary conditions and often to too much beefscrap in the mash. Remedy conditions and give castor oil.

Crop bound is quite likely to occur when fowls are fed lawn grass that has not been run through a clover cutter. Crop is hard and distended and comb pale. These cases can sometimes be cured without an operation by giving both olive oil and castor oil and then working and kneading the contents of the crop till they are loosened up. When this is accomplished, hold the bird's head down and see if you cannot work off some of the mass through the mouth. If you cannot do this, try the operation which is recommended by Dr. Sanborn:

"Pluck out a few feathers and then cut through the skin over the crop a line about one inch long. Then make an incision three-fourths of an inch long through the crop. The distention of the crop will cause the opening to

(Continued on Page 191.)

The Summer Season

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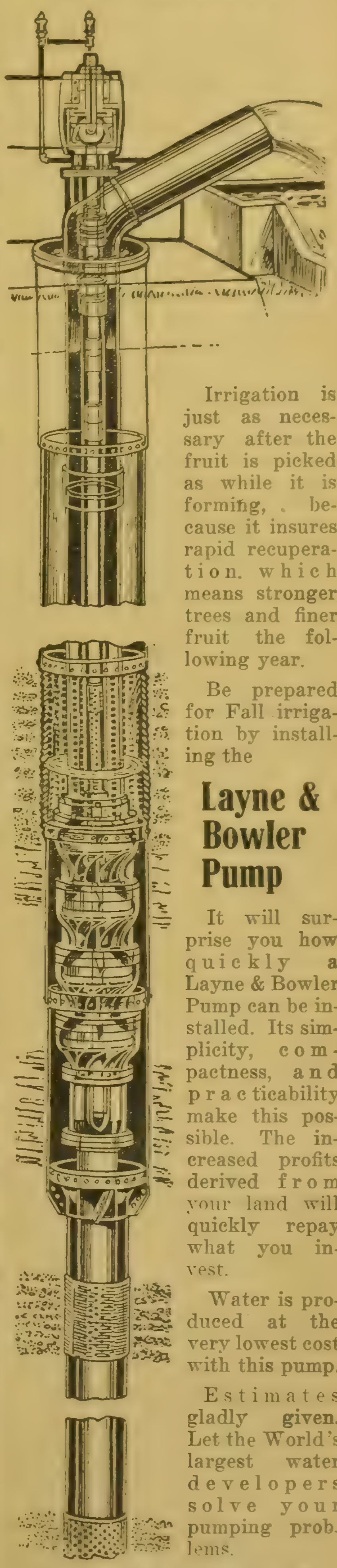

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Rural Californian combined with the California Cultivator

A Journal of Horticulture and Agriculture

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Thursday, August 20, 1914

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PRIZE PHOTOS

Amateur photography is aiding in teaching many lessons, as well as in giving much pleasure. One of the most popular features of the modern magazine is the photographic page. The Cultivator is anxious to make its engraving department as strong as possible. For a few months at least we will make an especial effort along one line, and that is the reproduction of photographs showing California home life. Note the prize offer which is made on page 184 and see there some examples of former prize winners in the Rural Californian. We hope to have liberal competition, though we grant the prizes are only nominal. We trust each home owner will have an ambition to get some view of farm life in the columns of the Cultivator.

REPORT ON INSECTS

The transfer of Mr. Essig from the state horticultural commission to work in the state university will raise the question as to the issue of the revised work on "Injurious and Beneficial Insects of California," which was so popular that the first edition was soon exhausted and Mr. Essig has been working for some months on a revision which should be even more complete. On this point we are glad to say that in going to the university Mr. Essig will control sufficient of his time to supervise the publication of the revised edition.

FARMER CANDIDATES

We have from the secretary of the Farmers' Congressional League notice of a meeting of the league to be held in Chicago, August 24-25. This league and the convention are for the purpose of organizing farmers and farmer candidates in order to promote the candidacy of farmers for congress and state legislatures. Under the classification of farmers editors of farm papers are also admitted.

Perhaps political conditions are such that farmers' interests can only be protected by some such organization, but we regret that such a step is necessary, for candidates should be bigger and broader than mere representatives of one class or calling. However, the tariff and other political measures have at times shown discrimination against the farmers' interests, and if such discrimination continues perhaps the only way to secure protection is to work for one idea at a time.

DISSOLVING THE TRUSTS

Trust busting is in thoroughly good form and there seems to be no discrimination between good and bad, or, if anything, it appeals to the ordinary layman that the bad ones are let off the easier. It seems to us that the rottenness unearthed in the New Haven investigations calls for punishment of people who appear to be high in social and financial life and yet have taken the bread from the mouths of many poor people. It is probable, however, that they will never be punished. On the other hand, a big campaign has been kept up to "dissolve" the International Harvester Company. We believe this concern has never been accused of any particular wrongdoing. It is admitted that it has materially lessened the prices of many farm vehicles and implements and so far as we know has never used unscrupulous methods in crushing out competition. But it has seemed to be popular to follow it to the end, and now the ruling has been handed down that it shall be "dissolved."

WAR CAUSING LOSS.

The awfulness of the war to Europe has been freely discussed and we are now beginning to appreciate the fact that the financial loss is not all Europe's. The fumigators find the supply of cyanide of sodium jeopardized, the fertilizer people are unable to get European supplies, but, worst of all perhaps from the California standpoint, is the inability of the sugar beet growers to secure seed. California has experimented quite largely in the production of sugar beet seed, and while it is often asserted that we have conditions here which enable us to produce just as good seed as is produced in Europe, yet in practice all of our seed has been imported. The little now available has jumped in price from $8.00 to $40.00, and unless some means of evading the blockade is devised the beet planting in California another year must be greatly reduced. Of course there are a few months before planting time in most sections, but the time is certainly not sufficient to terminate war and get vessels to carrying the world's commerce so that we can be assured of a supply for another year. Our wheat growers, potato growers and others may be able to make material advance in their returns because of high prices, but generally the war makes us all suffer.

LIMITATIONS OF EXPERTS

A subscriber at Hesperia wants to know some things as to experts who are sent out to advise farmers. He writes:

"I would like to know why the horticultural bureau sends men out among the farmers to give them worthless instruction. A man sent to this district to advise concerning destruction of Russian thistle has been advising that on areas of considerable extent the farmer should wait till the thistles are dry, then fire them without cutting. That looks like good advice, but in this locality at least it does not work; even when quite dry the thistles do not burn readily, and when they have dried uncut the seeds have already been sown broadcast. I have tried it—as the horticultural bureau evidently has not—and it looks to me as if a body of that kind is worthless if their instructions cannot be depended upon.

"I hope you will encourage them to try again, and next time to verify their suppositions before they pay a man's wages and traveling expenses to publish the would-be cures. I, for one, would like to know an easy method of destroying the thistle. At present the only satisfactory way I have found is to root it up before seeding time, pile at once and when the pile is dry fire it. That means work, however."

Whether our subscriber refers to the county horticultural commission, the state commission, the experiment station of the state university or to the so-called county "farm adviser," we are not certain. First, however, a word as to "adviser." County agricultural agent is a far better term, the use of which is requested by the bureau of farm management at Washington. Inspectors or specialists or agents from these various bodies are occasionally sent into the field to give the farmers information at first hand. Often young men recently from college have been chosen for this work, and sometimes they are of a mental make-up which impels them to carry through a bluff as to a knowledge of all things. They have not yet learned the greatness of the field in which the farmer operates and seem to think that as they are sent out as specialists it would be unwise to admit a limited range of knowledge and go out to seek for the information which the farmer wants. But more often we believe these men are thorough-going workers with a desire to be helpful. They are not supposed to have all knowledge, but are supposed to be in touch with experts in various lines who can aid them and the farmers in solving perplexing problems. That the best of us make mistakes is not to our discredit. In points such as our subscriber mentions the practical farmer is able to instruct the expert. He should then be open-minded enough to carry this information on to the next and act, as does the farm paper, as a clearing house of ideas to describe practices which advance the agricultural interests of our state. Expect much of the experts which our university is sending out; in the main we believe they will come up to our expectations.

Agricultural News Notes

The American Poultry Association met in convention in Chicago, August 11.

The island of Sicily is suffering from poor crops this year, following a year of poor crops in 1912.

Stock cars, refrigerator cars and even flat cars, it is reported, will be utilized by the railroads for handling the big wheat crop of the West and Middle West. Kansas alone promises 175,000,000 bushels of wheat.

Sugar beet growing in Chile is gaining in interest. Raw sugar is now brought in from Peru and refined in Chile, though in various parts of Chile sugar beets have been successfully cultivated, yielding 15 per cent of sugar.

It is reported that three of the largest oleomargarine manufacturing plants in the United States were seized last week by the commissioner of internal revenue for defrauding Uncle Sam of approximately $10,000,000 in taxes.

The oldest seed testing station in the world is in Denmark. Founded in 1871 it was taken over by the state 20 years later. Over 14,000 seed samples were tested here in the year 1912-13. Last year the state granted the station $1000, the remaining expense is covered by fees.

To discuss measures to protect the price of cotton from the depressing influence of a protracted European war, the president of the Southern Cotton Growers' Association has called a mass meeting of all the allied interests of the cotton trade at New Orleans early in September.

"South Africa wants Pacific coast apples," says our consul at Johannesburg, "largely on account of the system of packing best suiting market conditions. Medium-sized red apples, such as Jonathans, Rome Beauties, Banana Apples, Winesaps and Spitzenbergs, particularly the last two, are preferred to other varieties."

The exportation of orchids from the Philippine Islands is increasing. In March, 1914, 10,000 plants were consigned to a San Francisco firm and arrived in excellent condition. During May 5000 plants were shipped to the same firm. The consignments included four varieties: Sollerianas, Amabiles, Studianas and Sanderianas.

A folding crate has been patented which it is claimed can be used for apples and other fruits and vegetables and makes an excellent egg carrier as well, being particularly adapted to the needs of the small shipper who can use it over and over again as the knocked down feature makes its return very inexpensive, the rate being the same as on box shooks. In order to set it up as well as take it apart no tools, nails or staples are needed.

"American crops can and must move to Europe, which must have our wheat or starve," says Secretary Redfield of the department of commerce. "If England sweeps the seas, all English merchant ships will resume their transportation of our crops," says Redfield. "If Germany is successful, her ships will carry the grain. England is, of course, our biggest customer. Another thing that will help is the bill amending our shipping laws. But even if there are not enough American ships, European nations will send others. It's their worry, not ours."

Agricultural News Notes of the Pacific Coast

Northern California

Sutter County's big fruit dryers are all in active operation.

San Joaquin expects to begin its grape shipping on August 20.

Shasta County has 12,375 bearing and 17,600 non-bearing olive trees.

Water users of Placer County are making a fight for cheaper irrigation water.

The Anderson Valley Poultry Association is planning for its fall poultry show.

The cannery at Lincoln, Placer County, is running full handed on Phillip's cling peaches.

The reclamation service is still conducting investigations as to the Iron Canyon irrigation project.

St. Helena, Napa County, is planning for its great vintage festival which will be held September 4-7.

Petaluma poultrymen are planning for the "biggest ever" at the annual poultry show to be held in November.

Sacramento Valley stock breeders are anticipating increased demand for horses because of the European war.

Yolo County papers report the farm adviser work accomplishing great results for the farming interests.

Shasta County irrigators are planning for a canal which will carry 2500 miner's inches of water and irrigate much land.

Preparations are practically completed for the coming Butte County rice exposition, to be held at Gridley, September 3-6.

Sutter County nurserymen report receiving orders for trees for next spring's planting to a far greater extent than any preceding year.

Fruit men of Lodi recently had a conference with railway traffic officials and made satisfactory plans for handling this year's Tokay shipments.

The directors of the Anderson-Cottonwood irrigation district recently held a meeting and discussed best methods of improving irrigation service.

The horticultural commissioner of Butte County is insisting that rice growers keep their fields free from weeds in order to prevent spread of pests to other growers' fields.

Chico people are endeavoring to secure the construction of a bridge or a ferry across the Sacramento in order to make better communication between that section and northern Glenn County.

Hop ranches are paying $1.25 for picking hops, which is a 25-cent increase over former prices and, it is hoped, will be an inducement to local people to take up the work rather than import help from outside.

Because of the European war thousands of carloads of the grain from the big ranches of the Sacramento and San Joaquin Valleys have piled up in the mammoth warehouses at Port Costa. The warehousemen are willing to deliver and some of the ocean freighters are willing to try, but the exporters, unable to get marine risks against capture and confiscation, will not permit their barley to be loaded on the vessels.

Central California

Alfalfa growers at Kerman are now selling at six dollars, f. o. b.

A new cream station opened at Dos Palos on the first of the month.

Tulare County oranges are running larger than usual at this date.

The bonds of the Turlock irrigation district have been approved by the state.

Fresno's special raisin train of 60 cars made the trip to Chicago in less than six days.

The Terra Bella section of Tulare County has suffered from several severe grass fires.

Dinuba reports that every ton of 1913 raisins will be disposed of before the new crop comes in.

Hollister, San Benito County has made exceptionally heavy shipments of dried peaches, pears and apricots.

A poultry show will be one of the principle features of the coming Fresno Fair, September 29-October 3.

Color will be more of a guiding factor than in preceding years in citrus orchards of the San Joaquin Valley.

Olive growers of Lindsay have incorporated and purchased a tract of land on which they propose to build a factory.

With quotations on melons as low as $1.50 per ton, Turlock and Modesto melon producers feel like going to the European war.

So much water is being taken from the Stanislaus River by irrigation districts that the bed of the river is almost dry below the intake stations above Knight's Ferry.

The Kern County board of supervisors has decided to appoint a farm adviser, and to provide his salary will make him inspector under the horticultural commissioner.

The Santa Cruz County Cooperative Forest and Home Protective Association has establishei 14 stations where fire fighting apparatus will be easily accessible.

There has been an increase of one-half cent in the price of 1912 and 1913 Seedless Muscatel raisins. This advance is supposed to be because of the shutting off of the supply of Greek currants.

Plans are being perfected for extending the Tulare County Grower's Association to include olive growers of Central California. It is also proposed to add an olive pickling and canning equipment to the Porterville cannery.

It is reported that a million and a half dollars worth of California cured fruit is now on the high seas, enroute for Europe in English vessels, and possibly subject to seizure by German cruisers.

An orange packing house at Lindsay burned on the night of the 8th, entailing a loss of $30,000. The packing house, however, will be immediately rebuilt and will be ready for the opening of the season, November 1.

Grape shipments now going out from the valley are heavy. Fruit trains are carrying the limit of tonnage with which schedule time to the east can be made. It is expected that more trains will be put on to handle shipments.

Southern California

A walnut growers association for the Hemet Valley is now being agitated.

Citrus shipments from the Riverside district have reached the 4000 car mark.

Hemet apricot orchardists have had an exceedingly large tonnage of fruit this season.

Little Rock in the Antelope Valley of Los Angeles County expects to harvest 40 carloads of pears.

The Rialto Protective Association has made arrangements for fumigation work to begin immediately in citrus orchards.

Los Angles has joined Imperial County in sending to Washington a committee to appeal for protection from the waters of the Colorado River.

The Farmers and Fruit Growers' Federation called a meeting of Riverside growers at the Glenwood, Riverside, last week to discuss a campaign against the eight-hour bill.

Poultrymen of Riverside and Arlington listened to addresses on egg production by M. A. Schofield and J. E. Davis on the evening of August 10 at the Y. M. C. A. auditorium at Riverside.

Notice is given of a called meeting of the stockholders of Palo Verde Cotton Growers' Association at Blythe, on Saturday, the 15th day of August, 1914, to consider the dissolution of the corporation and distribution of the funds among stockholders.

The federal investigation into the so-called cantaloupe trust has resulted in the indictment of 28 men and seven corporations. The Western Cantaloupe Exchange, with headquarters in Chicago and Brawley, is one of the corporations named in the indictment.

The Tri-County Cow Testing Association recently organized at Riverside, has chosen the following board of directors: A. J. Stalder, Mrs. E. M. Bird, Riverside; J. R. Elliott, Arlington; L. A. Clark, Chino; W. F. Eldredge, Wineville; Cal Puffer, Redlands and S. J. Ulrey, Ontario.

Many complaints of depredations of grasshoppers come to Horticultural Commissioner Waite of Imperial County. He recommends a poisoned mash including Paris green and states: "The adding of the chopped oranges or lemons has been found of great advantage, as it is quite attractive to the grasshoppers."

The land owners of Palo Verde Valley in Riverside County have signed a petition to the supervisors to incorporate in the September budget a special tax levy against the district for $62,000, so that funds may be made immediately available for the construction of the levee system to prevent the encroachment of the Colorado River.

An organization of Imperial Valley date growers was formed at El Centro, July 25. Members expect to make exhibits at both the San Francisco and San Diego Expositions. The directors of the association are: W. E. Wilsie, president, El Centro; W. E. Packard, secretary, El Centro; F. T. Wellcome, Brawley; Francis Heiny, Brawley; James Brock, Heber.

The Coast

Montana is harvesting its greatest wheat crop.

The cotton gin at Chandler, Arizona, is now ready for business.

Eastern Washington is having a severe contest with Russian thistle.

Good yields of alfalfa seed are reported from Chandler, Arizona, fields.

Eastern Oregon is selling mutton sheep at larger prices than for years.

Wyoming is drawing heavily upon Utah for its supply of small fruits and vegetables.

The Hop Growers' Association of Yakima County, Washington, has re-elected last year's officers.

Dry weather in Western Washington is causing serious shrinkage in the output of the hop crop.

Ranchers of Chandler, Arizona, are putting up a stiff fight against Johnson grass along irrigating ditches.

Spokane, Washington, will consume about eight cars of cantaloupes shipped in from the Yakima country.

Fruit growers are apprehensive as to the fate of their shipments now in vessels on the way to European markets.

Stock men are appearing before the interstate commerce commission at Denver to appeal for a reduction in freight rates.

It is claimed that occasionally small shipments of cattle are brought across the Mexican line without proper inspection.

There is much rivalry between farmers' unions and granges in the preparation for contests at the coming Tri-State Fair at Spokane.

Southern Idaho is planning for the marketing of its largest potato crop. Many growers have sold at the rate of $1.30 per hundredweight.

The second annual corn show under the auspices of the O. R. W. & N. Company will be held at Walla Walla, Washington, November 25-28.

Big preparations are in the making for the Southern Arizona fair which will be held the middle of next January at Tucson. An Indian festival is to be a feature attractive to visitors.

A storm has been raised among Arizona cattlemen by the increase of tax assessment on range cattle from $21 to $24 per head. Formal protest has been entered by several associations of cattlemen.

A mass meeting of ranchers was held at Chandler, Arizona, August 14, to discuss he necessity for diversifying crops. The meeting was called by the local chamber of commerce and the farmers' union.

Labor troubles in Eastern Washington are responsible, the farmers assert, for matches being hidden in bundles of grain before they are fed into threshing machines. Many valuable machines have been destroyed because of resulting fires.

More than a quarter of a million dollars was paid out during the month of July for harvesting the berry crop of the Puyallup Valley in Washington, by members of the Puyallup and Sumner Fruit Growers' Association. This did not include cost of transportation.

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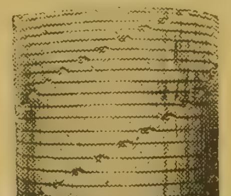

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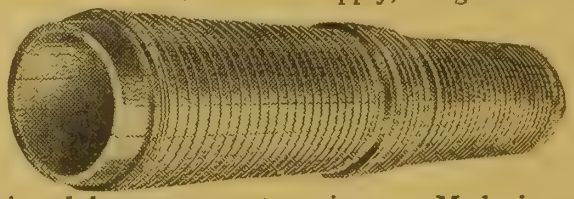

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Live Stock and Dairy

SHEEP ON THE SMALL RANCH

(Continued from Page 171.)

A strong vigorous ram of sufficient age (two or three years) will care for forty to fifty ewes. Yearling rams are less prolific than older ones.

Feed.

As to feeding, especially preparing lambs and older stock for market, it will be of interest and value to know what has been done in an experimental way. Since the California agricultural experiment station has reported no work in sheep feeding, I will quote from stations in the middle west, taking reports as compiled by W. A. Henry in his "Feeds and Feeding."

Grazing on Annual Pastures.

Keeping sheep chiefly on pastures specially sown for them was first practiced in America at the Minnesota station in 1895 by Shaw, who writes thus of the system: "It enables the flockmaster to maintain a much larger number of animals than he otherwise could. It makes it possible for him to give them more or less of succulent pasture from spring till fall, which is favorable to their development. It enables him to destroy cheaply and effectively nearly all kinds of weeds and to fertilize his land so that it will be in a good condition to grow other crops." In one trial Shaw grazed two lots of ten 80-pound yearling wethers for 112 days on the following succession of pastures: Winter rye, peas and oats, barley and oats, rape, kale, peas and oats. Lot II received 0.5 pound of oats per head daily in addition to pasture. The results of the trial are given below:

Grazing yearling wethers on special crops with and without grain:

Average Ration	Average Daily Gain, Lbs.	Average Total Gain, Lbs.
Lot I pasture........	0.15	16.8
Lot II pasture and 0.5 lb. oats	0.24	26.9

While the gains were not remarkably large with either lot, they were all that could be expected during warm weather. Lot II gained 60 per cent more than Lot I, which received no grain and was in better condition at the close of the trial. The increase in gain was worth more than the cost of the grain fed.

Common Fodders.

At the Michigan Station Mumford fed 6 lots, each of ten 75-pound lambs, for 98 days to test the value of various roughages. Each lamb received 1.4 pounds shelled corn and 1.2 pounds rutabagas daily, together with the dry fodder shown below:

Comparison of various roughages for fattening lambs:

Daily Allowance of Dry Roughage	Average Daily Gain Lbs.	Average Total Gain Lbs.	Feed for 100 Lbs. Gain Corn Lbs.	Feed for 100 Lbs. Gain Dry Fodder Lbs.	Feed for 100 Lbs. Gain Roots Lbs.
Lot I, clover hay 1.3 lbs.	0.35	34.4	395	373	340
Lot II alfalfa hay 1.3 lbs.	0.35	34.4	395	373	240
Lot III, millet hay 1.0 lbs.	0.26	25.8	523	372	453
Lot IV, corn stover 1.4 lbs.	0.31	30.2	451	462	387
Lot V, oat straw 1.4 lbs.	0.29	28.5	478	489	411
Lot VI, Bean Straw 1.5 lbs.	0.30	29.6	463	488	395

In this trial alfalfa hay proved slightly superior to clover hay. Concerning millet hay, which gave the poorest returns, Mumford writes: "More care is necessary in feeding millet hay to fattening lambs than any other coarse fodder. Unless fed in small quantites it induces scouring. Lot IV, given corn stover cut into 1.5 to 3-inch pieces with a silage cutter, made nearly as large daily and total gains as Lot I, fed clover hay, and consumed only a little more feed for 100 pounds of gain. This shows the high value of good corn stover for lambs. Oat straw proved inferior to clover or alfalfa hay, yet Lot V, receiving this fodder, made large and economical gains. Experienced feeders will agree that the fair returns from millet hay and the good returns from corn stover and oat straw were made possible in this trial because roots were fed with them. Bean straw proved a good substitute for clover hay."

Sorghum Hay.

At the Nebraska Station Burnett fed three lots, each of 12 lambs, averaging about 60 pounds, for 98 days on the rations given below:

Sorghum hay compared with alfalfa hay for fattening lambs:

Average Ration	Average Daily Gain Lbs.	Average Total Gain Lbs.	Feed for 100 Lbs. Gain Concentrates Lbs.	Feed for 100 Lbs. Gain Hay Lbs.
Lot I, alfalfa hay 1.7 lbs, shelled corn 1.4 lbs...	0.32	31.3	424	519
Lot II, Sorghum hay 1.7 lbs., shelled corn 1.3 lbs...	0.21	20.2	612	818
Lot III, Sorghum hay 1.7 lbs., shelled corn 1.1 lbs., linseed meal 0.2 lbs.	0.27	26.8	502	617

The lambs fed sorghum hay and shelled corn made only two-thirds as large gains as those fed alfalfa hay and corn, and required nearly 200 pounds more grain and 300 pounds more roughage for 100 pounds of gain. The lambs fed 0.2 pounds of linseed meal in addition to sorghum hay and shelled corn made heavier and more economical gains than those getting no linseed meal. The report states that during the last two weeks of the trial the lambs fed sorghum hay and corn tired of the ration and ate poorly, while those getting linseed meal in addition to the sorghum hay and corn ate well and made good gains throughout the trial.

Rape.

At the Ontario Agricultural College, Shaw pastured three lots, each of 15 lambs averaging 71 pounds in weight. Lot I was given no additional feed; lot II was fed 0.5 pound of oats each daily, and lot III had the run of an adjoining grass pasture in addition to the rape. The acre of rape lasted each lot 58 days, during which time the lambs made the gains shown in the table:

How Fed	Average Daily Gain Lbs.	Average Total Gain Lbs.	Gain in Weight from 1 Acre Lbs.
Lot I, rape only......	0.39	22.9	344
Lot II, rape and 0.5 lbs. oats	0.40	23.7	348
Lot III, rape and grass pasture	0.47	28.0	420

The addition of oats to the rape ration did not prove economical. The value and importance of grass pasture in supplementing rape for sheep feeding is strongly brought out by the larger daily and total gains made by Lot III. It is shown that an acre of rape will put from 300 to 400 pounds of gain on lambs grazed thereon.

At the Ontario College 54 acres of rape pastured 17 steers and 537 sheep, 1 acre lasting 12 lambs for two months. At the Michigan station 15 acres of rape pastured 128 lambs for 7.5 weeks, during which time they gained 2890 pounds in weight. It was estimated that one acre of rape pastured 9 lambs 7 weeks, producing in that time 203 pounds of increase.

Corn Silage and Mangels.

The Iowa Agricultural College fed 79-pound lambs for 112 days on corn silage or mangels in combination with alfalfa hay with the results as shown in the table:

Corn silage compared with mangels for fattening lambs:

Average Ration	Average Daily Gain Lbs.	Feed for 100 Lbs. Gain: Grain Lbs.	Roots or Silage Lbs.	Hay Lbs.	Cost for 100 Lbs. Gain Lbs.
Lot I, mixed grain 2.0 lbs., corn silage 1.4 lbs., alfalfa hay 1.6 lbs.	0.42	463	327	367	$5.90
Lot II, mixed grain 2.0 lbs., mangels, 4.3 lbs.	0.44	450	986	357	6.82
Lot III, mixed grain 1.9 lbs., alfalfa hay 1.7 lbs.	0.37	511	......	464	6.33

In this trial the lambs were all heavily fed on grain and made correspondingly large gains. The lot fed corn silage made almost as good gains as that fed mangels, and at considerably lower cost for feed consumed.

Indian Corn.

The table below gives the results of four trials with corn for fattening lambs at western experiment stations:

Fattening lambs on whole corn and hay:

Experiment Station	Av'g ration Corn Lbs.	Av'g ration Hay Lbs.	Av'g daily gain Lbs.	Av'g total gain Lbs.	Feed for 100 lbs. gain Corn Lbs.	Feed for 100 lbs. gain Hay Lbs.
South Dakota	1.5	1.3	0.28	30.5	561	485
South Dakota	1.6	1.5	0.35	39.0	466	431
Wyoming	1.1	1.7	0.29	28.6	381	584
Nebraska	1.0	1.4	0.33	31.9	308	412
Average of four trials	1.3	1.5	0.31	32.5	429	478

The lambs gained slightly more than 0.3 pound per head daily and required about 425 pounds of corn and 500 pounds of alfalfa hay for 100 pounds increase.

Wheat.

In the following table are summarized the results of five trials at four stations with whole wheat and hay for fattening lambs.

Fattening lambs on whole wheat and hay:

Experiment Station—	Av'g ration Whole wheat Lbs.	Av'g ration Hay Lbs.	Av'g daily gain Lbs.	Av'g total gain Lbs.	Feed for 100 lbs. gain Wheat Lbs.	Feed for 100 lbs. gain Hay Lbs.
Michigan	1.3	1.3	0.24	21.7	553	552
Montana	0.8	2.0	0.27	25.3	302	767
Utah	0.9	1.2	0.19	17.0	454	657
South Dakota	1.5	1.3	0.28	31.5	532	469
South Dakota	1.5	1.3	0.28	31.5	536	470
Average of five trials	1.2	1.4	0.25	25.4	475	583

In round numbers the Michigan lambs required 550 pounds each of wheat and red clover hay for 100 pounds gain. The Montana range lambs, in excellent condition when the trial began, consumed only 300 pounds of good wheat and nearly 800 pounds of clover hay for 100 pounds gain. The South Dakota lambs were fed mixed brome and prairie hay with bread wheat in the first and good durum or macaroni wheat in the second trial. Compared with the corn fed range lambs reported below the wheat fed range lambs required from 50 to 75 pounds more grain and 100 pounds more alfalfa hay for 100 pounds gain. This shows that wheat is less valuable than corn for fattening lambs.

Barley.

Throughout the western range district barley is used for fattening sheep and lambs. Below are given the results of five trials at western experiment stations with barley and hay for fattening range lambs.

Fattening range lambs on whole barley and hay.

Experiment station—	Av'g ration Barley Lbs.	Av'g ration Hay Lbs.	Av'g daily gain Lbs.	Av'g total gain Lbs.	Feed for 100 lbs. gain Barley Lbs.	Feed for 100 lbs. gain Hay Lbs.
Montana	0.7	2.1	0.27	23.7	253	763
Montana	0.8	2.1	0.26	24.3	316	819
South Dakota	1.8	1.0	0.36	37.9	509	263
South Dakota	1.6	1.3	0.26	28.5	617	518
Wyoming	0.8	2.8	0.33	29.6	257	834
Average of five trials	1.1	1.9	0.30	28.8	390	639

In round numbers the Montana lambs consumed less than 300 pounds of barley and 800 pounds of clover hay for 100 pounds of gain, while the South Dakota lambs required from 500 to 600 pounds of barley and only 400 pounds of prairie hay. It is shown that the lambs fattened on barley required about the same amount of grain and 100 pounds more hay than corn fed lambs for 100 pounds gain. Whole barley was satisfactorily masticated and digested by the lambs and the beards with rare exceptions caused no injury to their mouths. Whole barley is only slightly less valuable than corn for fattening lambs.

I have run the risk of wearying the reader in order to show the large variety of feeds that may be furnished sheep with assurance of rapid growth. Henry gives many more experiments but I have selected such as contain feeds more or less common in California. It may be that some of our cheap barley may with profit be fed to lambs that are yet to go to market. The experiments

(Continued on Page 191.)

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SEND THE PHOTOS

Since the lists of the Rural Californian have been united with the California Cultivator we have planned the adding of various features which were justly popular in the Rural. One of these is the photo contest. In the first issue of each month we wish to use engravings furnished by subscribers. To give an idea of some of the photos which were submitted in the Rural contest, we reproduce engravings used in that magazine, as shown on this page. What we want is farm life or rural home life. Animals or children do not necessarily have to enter into it, but we believe they add to the attractiveness of the picture.

Sleepy Toodles, a Prize Winner

For the first issue of September we will want photos in hand by August 28. We grant this gives short notice for the first competition, but let everybody get busy and send us in something. This will give practice for the competition in the October contest.

The prizes will be cash, $2.00 being given for the best photo and $1.00 for the second best. Bear in mind and make it a scene on the farm—in the poultry yard, in the orchard, or in or around the home. For engraving we must have reasonably sharp, clear, "contrasty" photographs. These points are more important than that of size. Many illustrations have been used in the columns of the Cultivator from negatives which were only 1¾x2⅜ inches in size. Of course, as a rule, the larger photo is better. It should be 4x5.

The same prizes will be given for photos for the first issue in October. They should be in this office by September 30 or sooner.

SUDAN GRASS

We recently gave a short article touching upon Sudan grass, and learning of its production in Texas we wrote regarding it. We have from the manager of the Sudan Grass Seed Association information that the department of agriculture has issued a bulletin on this recently introduced grass. From the bulletin we are given the following analysis:

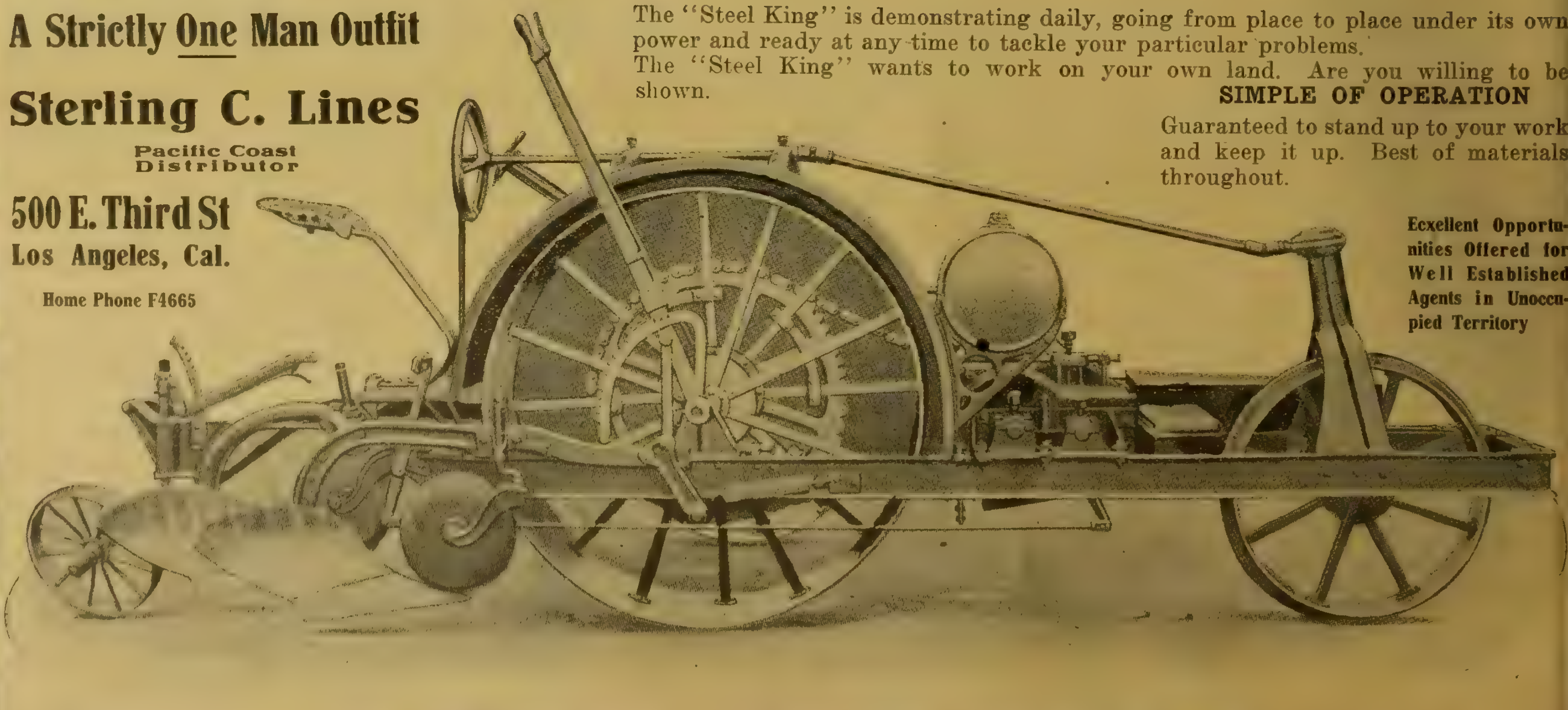
Tired, But Faithful to His Chums

Moisture	5.81
Ash	8.15
Ether Extract	1.68
Protein	9.13
Crude Fiber	26.75
Nitrogen Free Extract	48.48

Mr. Briggs, secretary of the association, advises:

"As to rainfall, in the experience of the farmers here, the grass seems to grow under almost any condition of rainfall. Last year several of the best crops had little or no rain upon them during the entire growing season. This year, under heavy rainfall, it is doing equally well, the only difference being that the yield will probably exceed last year's. The grass is one of the greatest drouth resisters known, and, in my opinion, backed by those who have grown it for three years, it is the best hay for all semi-arid regions, especially, but is also good where there is plenty of rainfall.

"As to the best time of the year for planting, here we plant it just as soon as the danger of frost is over and the ground is thoroughly warmed up. As to whether it will grow in your winter season, I am not prepared to say. However, we know of several crops that were harvested some three weeks ago, for the first time, in your state. With the long growing season in California farmers there should be able to get several crops of hay each season. We can get from two to three here in a shorter season."



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MOTOR PLOWS ECONOMICAL

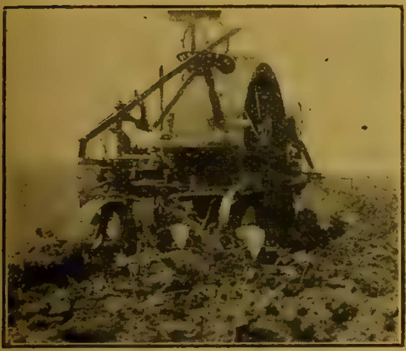
Is it economical to use power on the farm? Especially is it profitable to use other than horses to propel the plow, the disk and other small farm implements? An admirer of the motor plow submits the following:

"This service, in order to be effective must secure the following advantages of the motor as against the use of animal power:

"A. The initial cost must be less, or at most not more, than the cost of the same animal power.

"B. The expense of operation must be lower than that of animal power for the same work done.

"C. The implement and the motor must be built to stand to the work, no matter how trying the circumstances or conditions of operation.



Ready for a Day's Work

"D. It must be able to do what is done by animal power with equal facility. This means it must be light weight, flexible and easily handled and also have the faculty of turning within a short radius.

Plowing With Gasoline Costs Less Money

"E. The maintenance expense of the machine must not exceed the maintenance expense attached to the equivalent animal power.

Disking Green Manure Crop With Hood Arranged Over Motor So As To Protect Trees

"F. The depreciation expense of the machine should not exceed the depreciation expense of equivalent animal power.

"The initial cost may be close to $1000. The initial cost of the eight horses or mules, which it will replace, is $1600. In this connection it is well to state that the pull of a small motor plow is equal to six large animals, while it travels 30 per cent faster, making it equal therefore to the work of eight horses. Remember, these figures are conservative and safe, and result from repeated and careful comparisons under many different conditions of operation.

"The following table, computed from actual field work, shows in a striking manner comparative operating costs. An average of these figures for different kinds of labor shows a clear saving of more than 50 per cent in favor of the motor:

WORK DONE BY MOTOR PLOW		Plowing			Harrowing				
		Rolling adobe lands very hard and dry	Dry clay fairly heavy 3-10"	Moist sandy loam splendid condition 2-14"	Heavy adobe soil	Moist clay loam	Cultivating 10-year citrus grove	Mowing wheat 35 bu. to acre	Hauling good roads
Tool used		Double 24" disc	Mold-board gang	Mold-board gang	6 ft. 16" Discs	8 ft. 16" Discs	8 ft. 10-tooth culti-vator	8 ft. binder 4 miles pr. hour	2 2-ton wagons
Total area in acres		32	14	9	9.5	6	10	....	....
Average depth in inches		10	7	8.5	4-5	3-4	6-7	....	....
Acres per hour		.6	.72	.55	1.4	1.67	1.	2	....
Acres per day		6.	7.2	5.5	14.	16.7	10.	20	....
Cost per day:									
Operator	$3.00								
Engine distillate	.90								
Lubricating oil	.40								
Cup grease	.08	$ 4.38	$ 4.38	$ 4.38	$ 4.38	$ 4.38	$ 4.38	Two men $ 6.88	$ 4.38
Cost per hour:									
Operator	.30								
Engine distillate	.09								
Lubricating oil	.04								
Cup grease	.008	$ .438	$ .438	$ .438	$ .438	$ .438	$ .438	$ .69	$ .438
Cost per acre:									
Operator	.50								
Engine distillate	.15								
Lubricating oil	.07								
Cup grease	.01	$ .73	$ .60	$ .80	$ .31	$ .26	$ .44	$ .34	
Cost per ton mile:									$ .04
WORK DONE BY ANIMALS									
4 heavy mules, 1 driver at $2.50, total cost per day $4.50		(Data secured from average California conditions.)							
Area in acres per day		3	3.5	3.	6.	7.2	5.7	....	....
Average depth in inches		6	5.5-6.5	8.	3.5-4.5	3.	6.	....	....
Acres per hour		.3	.35	.3	.6	.72	.57	....	....
Cost per hour		$ .45	$ .45	$ .45	$ .45	$ .45	$ .45	....	....
Cost per acre		1.50	1.30	1.50	.75	.62	.80	....	....
Saving of motor over animals, per acre		.77	.70	.70	.44	.36	.36	....	....
Per cent saving of motor over animals, per acre		51	54	47	59	57	45	....	....

"A small machine of this kind weighs about as much as two large horses and plow, or about 3500 pounds. It turns in a small radius, travels over freshly plowed soil easily and is steered as conveniently as an automobile.

"The maintenance expense under ordinary care in handling may be as low as 15 cents per hour while under full operation. To maintain eight working animals in first class condition costs 40 cents per hour of work based on a day of 10 hours. The expense of keeping eight working animals per year averages from $800 to $1200, and they are equal to not more than 200 days of labor per year.

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Too many fellows are standing broadside to the trough.

STILL HANGING ON

Pat applied at the wharf for work as a stevedore. He was only four and a half feet in height, and the boss was dubious. "We're loading 300 pound anvils into that steamer," said he, "and a little runt like you couldn't handle 'em." "Try me," said Pat. And the boss put him to work. Pat hustled the anvils aboard all right. The cargo was nearly all stowed in the hold when the boss heard a splash. He ran to the rail, and looking over, saw Pat struggling in the water. "Throw me a rope!" he yelled, as he went under. He came up, called for a rope and went under again. Again he rose to the surface. "If you don't throw me a rope," he spluttered angrily, "I'm going to drop this anvil."

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A. L. SCOTT, President. SACRAMENTO C. W. PAINE, Secretary.

Questions and Answers

THE EDITOR AND STAFF

Questions to be answered in this department should be received at this office one week before reply is expected. Write plainly on one side of the paper and sign full name and address. Unsigned communications receive no attention.

Initiative and Referendum

Please give information regarding the different questions to be voted upon at the November election.—Subscriber, Manzanar.

We will endeavor to give an outline of these questions in a later Cultivator. There are more than 50 of them so that we can only give the merest outline, which will be done as soon as possible.

Aphis

I send a watermelon leaf which seems to be affected with disease. The plants are on good rich soil, are vining well, but some are wilting at the root. Ants and ladybirds are working at them. What is the trouble?—Subscriber, El Cajon.

From the appearance of this leaf would say it is one of the worst infestations of melon aphis we have ever seen. The leaf is one mass of dried mites which appear like aphis. In addition it is covered with black smut or fungus which usually comes with this insect. Spraying with any of the weaker contact insecticides is effective, though as a rule little attention is given to spraying of melons. The first appearance of the infestation should be met by pulling and burning the entire vine. Keep the weeds down around the field and give no chance for the pest to spread. Earlier in the season the state horticultural commission supplied colonies of ladybirds, but it would probably be too late to get any for this particular infestation. The wilting from the root as mentioned sounds like melon blight and for that there is no help other than complete destruction of the vine to prevent its spreading.

Name of Bird

I have noticed a bird about the size of a robin, which sits on the fence and darts into the air catching insects. The male is black with white spots on wings. Does this bird eat bees?—Subscriber, El Cajon.

As a rule birds do not molest bees. We cannot say in this particular case. It is possible the bird is one of the fly-catching family and our judgment would be that it is beneficial. Can any of our subscribers give us the name of the bird?

Teacher's Examination

Is a student graduating from high school allowed to take examination in Tulare County to teach country schools?—Subscriber, Portersville.

We believe that anyone is permitted to take the examination, whether a graduate from any school or not.

Soap Powder Sprays

I see a great deal about using soap powders of various brands for black scale. Are they of any value on olive or orange trees which are very scaly? The trees are young and I wish to avoid fumigation for the time being.—Subscriber, Nordhoff.

When the scale is young, as at this time of the year or for another month or two, simple soap washes prove very effective. They are easily mixed and with young trees may stand off fumigation a year or two. The strength varies from six to 12 gallons of water to each pound of soap. We do not think any particular brand has any great advantage, for bar soaps and soap powders are much the same, the cheaper brands, if anything, will prove the more effective because of their rosin content.

San Luis

I have taken the Cultivator for over a year now and with all the information given in regard to different farming countries I have never seen any mention of San Luis Obispo County. Is it not a good farming country?—Subscriber, Santa Ana.

California would not wish to get along without San Luis Obispo. It is, however, a very modest county and has not sung its own praises very loudly, and its hills and fields have been given over quite largely to the live stock industry. The fruit industry has been discouraged by refusal of its supervisors to appoint a horticultural commissioner, and fruit growers naturally question the wisdom of going to such a section to take up that industry. The risks are great naturally and when the county refuses to protect the industry it might be unwise to make investments, but for live stock, general farming, sugar beet raising and many other lines, San Luis Obispo County offers rich opportunities.

Celery Plants.

Where can I get celery plants?—Subscriber, National City.

Any seedsman advertising in the Cultivator can supply you.

Grape Juice

Can you tell me the present condition of the grape juice market Is it controlled by a few large concerns and is the demand for this product increasing? What varieties of grapes are best for manufacture of the juice? Can these varieties be grown successfully near the coast in Southern California? Would also like to know the value of the product as a food and the reasonable return per acre from land well adapted to this industry.—Subscriber, Saticoy.

The grape juice market has not yet reached a thoroughly dependable condition, at least not for California-produced juice. One large concern which was started near Lodi found a most discouraging reception for its production and we believe has ceased to operate. We presume there is more Eastern-manufactured grape juice sold in California than there is of California-made. The consumer's taste seems to demand the flavor of the Eastern grape.

The California grape as a rule has given a very mild, sweet juice, much preferred by some of us to the Eastern product, but unfortunately not by the general trade. The expense of sterilization is so great that it has forced the price up so that consumption must be most limited. If this manufacturing cost could be reduced so as to greatly increase consumption, and we believe it can be, and an advertising campaign carried on, there should be a great market for California grape juice. As to varieties, would suggest that the inquirer write Dean Thomas F. Hunt, director of the state experiment station, Berkeley, and ask for Circular No. 108. On page 11, varieties, together with analysis or table of composition of each, is given. Grapes are recommended both for the coast region and for the interior. The value of grape juice as a food is high. California juice, being richer in sugar and lower in acid than the Eastern, a market should be developed for it.

Irrigating Corn.

Does corn require more water when it is blooming and forming ears? Is there a way of spraying to prevent worms entering the husks?—Subscriber, Gridley.

We would prefer, if possible, to have thorough irrigation somewhat precede the blooming time, but without question the corn should be well supplied with water for there is heavy drain to supply the exceedingly large growth made at that period in the life of corn. There is no very satisfactory way for disposing of the corn ear worm. We would refer our subscriber, however, to the issue of July 30, where Mr. L. L. Whiting, Winchester, tells of his method of using aloes, asserting that it is accomplishing good results.

Possibly Blight

I send small twig from apple tree which appears to be affected with a fungous growth. This trouble seems to appear only on the new growth and I am not sure that more than one variety is affected. The trees are grown at an altitude of 4000 feet, under desert conditions.—Subscriber, Tehachapi.

The description is not quite definite enough to be sure, but the fact that the trouble attacks the younger growth seems to indicate fire blight. In this case the tender top is first affected and the trouble proceeds down the branch until the larger limbs are affected. The only remedy is cutting out the diseased branches, sterilizing instruments between cuttings.

Boy's Name.

Where a woman has a son by a first husband and marries again, whose name does the son take, that of the first or second husband?

Unless legally adopted the boy would carry the name of his father.

Feed for Hogs.

State the relative values of Egyptian wheat and kaffir corn or milo maize for hog feed? Does the green fodder make good feed and can they be successfully fattened on the grain, and which is best?—New Subscriber, Merced County.

It is difficult to advise you about your problem without knowing whether you are dry farming or irrigating and how you are handling your hogs. If you depend on winter moisture for your grain crop, wheat or barley sown in the fall, so as to get the benefit of all rains would probably make you the best yields. Wheat (either Egyptian or common wheat), grows best in cool weather and in order to get a satisfactory crop of corn with only the winter moisture, the ground must be continually cultivated to conserve all the moisture possible, before the corn is planted. If you irrigate, corn planted in May or June would doubtless give you a larger yield than wheat. Both are good feeds for hogs and the relative value would depend on the condition of the hogs, and what other feed is used. We do not find any experiment station tests to compare these feeds, but our judgment is that there would be practically little difference pound for pound. Grow the one that will give prospect of the greatest tonnage of grain per acre. Green fodder is valuable for succulent feed but when fed green will not give the fattening value of the matured grain. After the grain has matured

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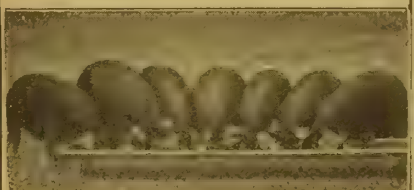

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the dry fodder has little value for hogs. For best results in feeding either wheat or corn to hogs they should have alfalfa pasture or green alfalfa cut and hauled to them.—W. S. G.

Veterinary

Answers in this column by Dr. Wm. Petrie, 2714 South Harvard Blvd., Los Angeles, are without charge. For immediate mail answer remit $1.00. In writing questions give full symptoms or particulars of injury of animal.

Lung Worms

I have cows which have a bad cough. Think it got into the herd from a calf which I bought to raise, and which soon took sick and died. I cut it open and found the lungs filled with a cheesy matter, which I afterwards concluded was worms. I used turpentine twice a day for a week with the rest of the cows and another one of them died. Also gave other medicines with little benefit. The veterinarian here did not seem to know what to do for the trouble. Can you suggest a remedy? — Subscriber, Bakersfield.

If the trouble is lung worms, as you seem to think, the turpentine should have helped them some. If you still think the trouble is due to worms, have your veterinary inject a teaspoonful of turpentine into the windpipe with a hypodermic syringe. That is the most direct way to get at them and will probably end the trouble.

Milk Fistula

I have a half-breed Toggenburg goat that was cut on the side of teat by a wire. The wound has healed and left a small opening the size of a pinhead that leaks milk all the time. Can anything be done for it? —Subscriber, Palm Springs.

It will be a difficult matter to close the opening while there is a great flow of milk. When the goat is dry it will be an easy matter. Split the skin and flesh of the teat up and down right through the opening, being careful not to cut through into the milk duct. Dissect out the little fistula and close the wound with two stitches and wipe dry, then cover the wound with a thin coat of collodion. When this heals the opening will probably be closed. If the operation is performed while there is a flow of milk you should insert a self-retaining milk tube and leave it until the wound is perfectly healed.

Indigestion

Have a Holstein cow which pants with her tongue out just like a dog when it is warm. In the morning when it is cool she breaths like she was tired or warm. She is in ordinary flesh for a dairy cow and gives a large flow of milk. Has a calf about two months old. What is the cause and is there any remedy?—Subscriber, Tulare.

Probably it is indigestion. An overloaded stomach would be accompanied by such symptoms as you describe. Get half a gallon of raw linseed oil, half a pint of turpentine and one ounce of aloin. Mix and divide into four doses. Give one dose every two or three days.

Sluggish Liver

I have a cow that has been fresh for ten days. At first she seemed to be all right, but now seems dull and does not eat as much as usual. The milk is still thick and yellow, as it was when she first came fresh. One of the teats gives milk that is lumpy and a little bloody. Am feeding just alfalfa hay. What can be done?—Subscriber, Hughson.

The secreting organs are not acting right. Give the following medicine to stir up the liver and stomach and you will probably see no more trouble. Get your druggist to prepare raw linseed oil, one quart; turpentine, four ounces; aloin, one ounce and pulverized nux vomica, one ounce. Mix. Shake well and divide into three doses. Give doses three days apart. Also get two pounds of Epsom salts, one pound of common salt and four ounces of gentian. Mix and give a handful once a day.

Dog

We have a French silk poodle dog seven years old that has usually been well except once in a while when she becomes stiff and finally vomits foam or a yellow, greenish substance and sometimes only the food.

For several years during the summer she has had sores come on her back varying in size from a quarter to a half-dollar. The skin seems natural before they come, but she begins biting and licking on a certain spot until it is raw and remains so for a week. This one will heal up and another come. Is it contagious so people might become affected with it and what can we do for it?—Subscriber, Pasadena.

It is not contagious, but is due to bad blood. The vomiting of yellow, greenish bile was bilious indigestion caused by too much food and not enough exercise. It has become chronic and can only be relieved, but not cured. The remedy is less food, more exercise and little or no meat. Raw liver is best if any is given. Keep the bowels open by giving one grain of calomel at night, once a week, followed by a tablespoon of a strong solution of salt water the next morning. Also give 10 grains of cream tartar twice a week. Keep this treatment up until her flesh is reduced and the irritation stops.

Sore Neck

I have a mare five years old with quite a number of little sores on the top of her neck and at times she seems to be in great pain. She has had this for a year or more and seems to feel them worse in the heat of the day. I have tried several remedies, but with no results. Kindly let me know what to do for it.—Subscriber, Tulare.

First clip off the hair very close. Then with soap and warm water scrub the parts clean. Get your druggist to prepare the following: Dilute acetic acid, one pint; acetate of lead, one ounce, and add sulphuric acid, one-half dram. Mix well. Every evening wash the parts clean with cold water and rub dry. Then shake the lotion and apply enough to wet the parts.

Sweeney

Have a three-year-old mule with a sweeney of the shoulder caused by working on a harvester about three months ago. I blew it up twice with a bicycle pump and for a while it looked all right, but now it is getting worse again. The skin is hard and sticks to the bone. Please advise me what to do with it.—Subscriber, Porterville.

Three-year-old horses or mules should not be worked. Their muscles are tender and a sudden jerk or strain is liable to ruin the animal, as you have found out. A good treatment for sweeney is to put a tape about an inch wide under the skin the whole length of the muscle that is affected. Cut a hole about an inch long at the upper and lower end of the sweeney and, with a blunt needle threaded with the tape, pass it under the skin from the upper to the lower opening. Draw the tape through and tie large knots on each end so it cannot come out. The tape should be oiled with castor oil and turpentine before using it and it should be moved up and down every day until the muscle fills up to its natural size. Then remove the tape and wash out the canal with a good antiseptic solution. Once the muscle is filled up it will probably stay so. To soften the skin keep it well greased with lard. You really should have a veterinary to treat it, as it will require skill and instruments that you would not have.

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FARM LANDS FOR SALE.

Over Two Hundred persons have bought land in the last [illegible], [illegible] that I searched out from the state records. Many of them have [illegible], sent or ten dollars per tract to pay for [illegible]. Quite a number bought more than one tract of land. Some have sold much more quickly and at larger profits than they expected. One man sold the same day at a profit of $500, another man [illegible] at a profit of over $7000 in thirty days. If desired we will give you the names and addresses of [illegible] who have sold at a profit of 700 per cent who have purchased land through my service. Possibly if we get acquainted we would do business that would be profitable to all concerned.

First I am not a dealer; not an agent, not a locator. I am a searcher of records, commissioner of deeds, and candidate for state office on the Progressive ticket, subject to the wishes of those registered as Progressives at the primaries August 25th; have been interested in surveying and improving land in many counties—from Los Angeles to Shasta —from the coast to Nevada. I have searched state records for over twenty years, and have made a specialty of this work for more than four years. Those I have worked for say I am better informed along these lines than any other person they have met in the state. I have served on important appointments for the federal government. My ambition is to serve one term and get all the state lands in the hands of the people who will improve them, thus adding millions to the school fund, and giving the land to those who want it, and reducing the taxes of the people. I am the only candidate who states he will perform all he promises, or invites the recall.

At present I am manager of the CALIFORNIA STATE LAND INFORMATION BUREAU, and giving out information as per offer in free booklet. I ask a payment with order of $5.00, which helps to pay advertising expenses for my work. I trust you to pay me $10.00 after you get land on record in your name and all is satisfactory. If elected to office I will receive a salary and not fees. One of my promises is: "I will get out and help survey some grants and help homeseekers get land that does not belong to grants." WE NEED A CHANGE. "Your right to hire gives you the right to fire." If I don't do as I promise, fire me by the recall.

If you want the result of years of searching until 1915, send in $5.00 by personal check or any way convenient, and promise to pay $10.00 after you buy any sized tract of land. No trouble to answer questions. Write me fully with your order or any time. Joseph Clark, Manager, CALIFORNIA STATE LAND INFORMATION BUREAU, 1511 K St., SACRAMENTO, CALIFORNIA.

VICTORIA, AUSTRALIA, WANTS SETTLERS

Special inducements; government land, railways; free schools; cheap irrigation; 31 years to pay for farms adapted to alfalfa corn, grains, fruit, etc.; climate like California, ample markets; reduced passages, special excursion next November. Free particulars from F. T. A. FRICKE, Government Representative from Victoria, 687 Market St., San Francisco, Cal., Box X.

For Sale—Better Than Lease—160 to 1600 acres of fine sub-irrigated river bottom land suitable for beets, beans, rice, grain and vegetables. Near large city. Good markets and cheap transportation. Will sell for $200.00 per acre, 5 per cent cash and 5 per cent each year until principal is fully paid. C. H. Barlow, 111 So. Broadway, Los Angeles, Cal.

For Sale—Best paying alfalfa ranch in the beautiful Santa Clara Valley, one-half mile from R. R. station 18 acres alfalfa, 2 acres family orchard; beautiful residence, outhouses and irrigating plant. Address W. Kiely, Lawrence, Cal.

For Sale—Ten acres, fruit ranch, trees two and four years old; seven acres of apples and three acres peaches, cherries, pears, plums. Price $6,000, half cash, balance on time at 6 per cent. F. W. Duncombe, R. F. D. 1, Beaumont, Cal.

For Sale—160 acres unimproved land 3 miles from Anderson. Some timber and underbrush. Can be irrigated from canal. Red clay loam, suitable for olives and fruits. Price $12.00 per acre. Anderson Realty Co., Anderson, California.

Apple Orchards—Large and small, in the only apple producing section in California. The greatest section west of Missouri River. Write for booklet. Geo. W. Sill & Co., Watsonville, Cal.

Ranches, homes, acres, lots, exchange; send for free list. Wilson Bros., Santa Cruz.

POULTRY

How to Make Money—Mrs. A. Basley's latest Poultry Book is without exception the best ever written. The secret of how to raise every turkey hatched and the "Basley Formulas," now published for the first time, are worth many times the price of the book. The "Western Poultry Book" is a practical book by a practical woman. Price $1. Order from Cultivator Publishing Co.

For Sale or Exchange—Wanted, 100 pullets, Plymouth Rocks, R. I. Reds or Orpingtons, to feed my Burbank Spineless cactus to. You want the cactus, I want the chicks. 50c slabs for 50c pullets. Address or ship to H. L. Bauers Cactus Ranch, 4401 Hummell St., Los Angeles, Cal.

Poultry Wanted—We pay the highest market price for all the local poultry we can get, no matter how large the quantity; also fresh ranch eggs. We remit immediately. National Poultry Co., successors to Allaway & Layton Co., 607 E. Third St., Los Angeles, Cal.

Barred Rock Cockerels (Hawkins' Royal Blue Strain) ready for fall mating. All the popular breeds of baby chicks every week after Aug. 15th. Order early and avoid the rush. Enoch Crews, R. 1, Santa Cruz, Cal.

For Sale—Japanese Silkie—$5.00 for trio. Cockerels, $2.00 each until sold. These are the thoroughbred White Silkies, with feathers on their legs; fine pets. J. H. Brohaska, R. F. D. 57 A, Chula Vista, Cal.

Baby Chicks—White Leghorns, McFarland strain, Barred Rocks and R. I. Reds. Ship anywhere and guarantee safe arrival. J. W. Lyon, R. D. 1, Box 170, Gardena, Cal.

Barred Plymouth Rocks — "None better." Special prices for May and June. Write for 'em. C. H. Vodden, Los Gatos, Cal.

SEEDS AND PLANTS

Grow Sudan Grass — The new forage crop — endures drouth, yields heavy, excellent in feeding value. Plants rogued and seed personally inspected by experiment station officials. The supply this year is limited. Seed one dollar per pound. B. D. Short, Rhome, Tex.

For Sale—Avocado Seeds (Alligator Pear) at $4.00 a 100; $35.00 a 1000. I also have to offer a few small yearling Avocado trees at $10.00 a 100. J. B. Wagner, Nurseryman, Pasadena, Cal.

$ $ $ SpineleSS Cactu$—All varieties Burbank's fruiting and forage plants, 10c up. Plant now. Booklet free. Wonderful new Giant Rhubarb. Black Bros.' Nursery, 455 Lucas, Los Angeles. $ $ $ $ $ $ $ $ $

Thornless Cactus Slabs for sale at 5 to 15 cents each. Chas. R. Hanna, R. D. No. 3, Riverside, Cal.

BEES

It pays to keep bees on the farm, raise your own honey, make considerable profit besides. We can supply gentle Italian bees at 3.50 for five frame colony, five dollars for ten frames, and ship anywhere by express. Write for our free price list of bees, instruction books, etc. Spencer Apiaries Co., Box 14, Nordhoff, Cal.

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201 Main St. San Francisco

Household Department

LAUGH IT OFF

Are you worsted in a fight?
Laugh it off.
Are you cheated of your right?
Laugh it off.
Don't make tragedy of trifles,
Don't shoot butterflies with rifles—
Laugh it off.

Does your work get into kinks?
Laugh it off.
Are you near all sorts of brinks?
Laugh it off.
If it's sanity you're after,
There's no recipe like laughter-
Laugh it off.

—Eliot.

CANNING CORN ON AND OFF THE COB

The following seasonable recipes for the canning of corn have proven both practical and economical for the housewife. The recipes have been worked out in the department's canning kitchen and the products tested for nearly two years.

These recipes have been used in connection with the five different types of canning devices and the corn has been put up in all types of containers, such as glass top, screw top, suction top, and tin cans. The method employed is the cold-pack method, the same as is now being used in the best commercial factories of the world, instead of requiring the laborious and tedious method of fractional sterilization of an hour each day for three consecutive days and the lifting of the products in and out of the canning devices three times. The method now employed contemplates but one sterilization and turns out the product in better shape, with better color, texture, and flavor than the fractional sterilization method. By following these recipes and method the family can have corn, either on off the cob, throughout the year at a very reasonable expense of time, enery and money:

Corn Off the Cob.

Select sweet ears of uniform size and proper ripeness. If too ripe the corn will color while processing. (Processing is the canning term for sterilization or cooking). If not ripe enough much of the food value is lost in cutting the corn from the cob. Use either glass jars or tin cans. For market purposes and greater safety in transportation, use tin cans.

Remove husk, silk, shank, tips and injured or defective places. Blanch corn in boiling water or steam chest for from five to ten minutes. The time depends upon the stage of ripeness, size of ears and degree of freshness. Remove the ears and plunge quickly in cold water.

Cut the corn from the cob with a sharp, thin-bladed knife. Pack well in glass jar or tin can; add hot water and a level teaspoon of salt to the quart or No. 3 can. Place rubber and glass jar top in place, not tight. If using tin, solder cap in place and fill vent hole, or seal completely. Process the corn from 180 to 240 minutes in the home-made or hot water commercial bath outfits; for one and one-half hours in the water-seal outfits; for 60 minutes when using from five to ten pounds of steam pressure, with the steam pressure canning devices, and 40 minutes when using the aluminum steam pressure cooker outfit. After processing remove the jars, tighten covers, invert to test the joints and cool.

If using tin, inspect the soldered end caps for pin-hole leaks. Repair all leaks, allow to stand for 24 hours. If cans are still bulging at ends at the end of this time, one of two things is true—the pack is too full, or some live spores are still left in the can. If the latter, replace in sterilizer and process the second time from 30 minutes to one hour.

Canning Sweet Corn On the Cob.

Blanch in boiling water five to ten minutes, according to ripeness, size and freshness; plunge quickly in cold water. Pack, alternating butts and tips; add just a little boiling water and one level teaspoonful of salt to each quart. Place rubber and top and partially tighten. (Cap and tip tins.) Process 180 to 240 minutes in hot water bath; one and one-half hours water seal outfit; 60 minutes under five or more pounds of steam; 40 minutes in aluminum pressure cooker. Remove jars, tighten covers, invert and cool. (Heat up for table use in steamer, not in water. If corn seems flat or water-logged, it has been overcooked or allowed to stand in too much water.)

Use one or two quart glass jars if not needed for other products. Quart jars will hold two ears, two-quart jars will hold from three to five ears, according to size of ear. Do not can large ears. Half-gallon or gallon tin cans with large openings should be used in the canning of ear corn when idle glass jars are not available. Gallon tin cans will hold from six to twelve ears. They should be graded to uniform size.

In high altitudes, 4000 feet and over, it will be necessary to increase the time requirements in the canning of sweet corn about 25 per cent, if water boils at about 202 degrees Fahrenheit and even less.

The Jars

In the average home a large number of glass jars are idle every year. The use of these idle jars is recommended, but if hone are available, the most economical and practical containers are the half-gallon and the gallon tin can.

The gallon tin cans, including soldered-hemmed caps, will cost about six cents apiece, but they will hold six to twelve ears of corn, which is enough for a good-sized family. If the corn is removed from can and steamed for a few minutes, it cannot be distinguished from the sweet corn removed from the husk in midsummer. The corn can be heated in the container before opening to serve.

An ear of sweet corn on the average dining car and hotel a la carte service costs 25 cents. Considering this, canning corn on the cob for the market might prove a very profitable investment for a thrifty housekeeper and bring to her considerable pin-money.

One advantage of sweet corn canned on the cob over other canned corn, is that all the best food values are kept with the cob. In cutting corn off, the germ quality of the kernel, which keeps up its standard, is usually lost. This germ quality is the part of the corn that is sought by rats and mice when they look for food in the corn bin, and is the most vital part. Much of the corn is also rendered mushy when it is cut from the cob.

IDEAS FOR THE COOK

Written for the California Cultivator
By Isabel Cottle

Breakfast

Ripe Pears
Cream of Wheat with Dates
Bread Scallops Frizzled Bacon
Coffee

Lunch or Supper

Sliced Cold Roast Beef Tomato Cakes
Cantaloupe Salad Rolls
Strawberry Shortcake Iced Tea

Dinner

Fricassed Steak Dumplings
Baked Sweet Potatoes
Creamed Summer Squash
Chilled Tomatoes, Cheese Dressing
Grape Pie Coffee

Tomato Cakes.

One cup canned or cooked tomatoes, two eggs, one dozen soda crackers rolled fine. Season the tomatoes and mash with half the crackers, add the eggs and beat smooth, add the rest of the crackers and form into small cakes. Drop on a hot buttered griddle and fry a nice brown.

Cantaloupe Salad.

Cut well chilled cantaloupes in halves lengthwise, take out the seeds and remove the pulp in nice even pieces, sprinkle lightly with salt and paprika, and add an equal quantity of crisp lettuce cut in strips. Garnish with boiled salad dressing made without oil or mustard. Place shells of cantaloupes on salad plates, garnish with large leaves of lettuce and fill with the salad. Serve at once while cool and crisp.

Bread Scallops.

Soak one teacup of bread crumbs in half a pint of milk, beat into them one large fresh egg, add half a cup of grated cheese, a tablespoon of melted butter and a grain or two of cayenne. Butter some patty-pans, sprinkle fine bread crumbs over them, then put a little of the mixture in each pan and sprinkle bread crumbs over the top. Bake for a quarter of an hour in a very hot oven and serve in the patty-pans.

Bread Cake.

Two cups bread spongs, two cups sugar, two eggs, one teaspoon lemon extract, one teaspoon cinnamon, one teaspoon allspice, one teaspoon nutmeg, one teaspoon soda dissolved in hot water, one-half teaspoon salt, one cup raisins, one-half cup melted butter, one and one-quarter cups flour. Mix and put in baking pan; set in warm place; let rise an hour and bake 45 minutes.

FREE HAND COOKING

The biggest 10 cents' worth I ever saw offered to the housekeeper is a small book of 36 pages, printed by the American School of Home Economics, 506 West 69th street, Chicago.

Its title is "Freehand Cooking On Scientific Principles." Its purpose is to give "the comparatively few fundamental recipes in cooking which are capable of infinite variation. Exact proportion, conditions and materials are essential to obtain identical results in cooking, but materials vary and conditions differ, so that it is often necessary to modify a recipe. By 'freehand cooking' is not meant hit or miss cooking, or cooking by guess, but the compounding of food materials on scientific principles—not following blindly by 'rule of thumb.'" And the scientific principles are stated clearly in the fewest possible words in very plain English. In fact the little book contains just the knowledge that is gained by a lifetime's experience of a "born" cook who is also a keen observer — and more.

It gives tables of weights and measures, cooking time-tables, thickening agents, leavening agents, shortening, flavoring and recipes.

From "Thickening Agents" we quote:

"The common thickening agents are flour, cornstarch, rice flour, potato flour, arrow root, eggs; also gelatin, sea moss, junket for milk and pectin of unripe fruits stiffen liquids on cooling.

"One level tablespoon of flour will thicken one cup of liquid for soups.

"Two level tablespoons of flour will thicken one cup of drippings or other liquid for gravies and sauces.

"Five level tablespoons of browned flour will thicken one cup of liquid for gravy.

"The thickening power of cornstarch is about twice that of flour.

"Two good sized eggs to one pint of milk make a custard—one egg to a cup for soft custard or baked cup custard; three eggs to a pint of milk for a large mold custard.

"One level tablespoon of granulated gelatin will stiffen about one pint of liquid, if cooled on ice."

From "Leavening":

"When eggs are used as leavening agents, the whites are beaten separately, as they will hold much more air than the yolks, and folded into the mixture the last thing, breaking as few air cells as possible. When air is depended on for a leavening agent, all materials are kept as cold as possible. Cold air expands more on heating than warm air. In pastry making heat also melts the fat so that the dough cannot be handled."

From "Shortening":

"Fats are added to doughs to make the product brittle—'short,' and to enrich the mixture. The fat counteracts the adhesive properties of the gluten and starch in flour.

"Pastry flours contain less gluten than bread flours and so require less shortening.

"Butter and oleomargarine contain about one-eighth water and salt, and thus have less shortening powers than lard, drippings, snowdrift, cottolene, etc., which contain no water."

These are only hints at the value of the book. Then there are pages of recipes. Send 10 cents to the address given above or to the Cultivator and you will receive this bulletin.

HOUSEHOLD QUERIES

Canning Green Peppers

Have lots of green peppers and have tried canning them the same as I do fruit by toasting the skins on ashes, then plunging in cold water and taking off the skins, after which I boil and can them, but they do not keep. Would like a good recipe for canning this vegetable. — Subscriber, Santa Maria.

Probably the peppers spoiled because they were not sufficiently sterilized by boiling. As a rule vegetables should be boiled hard for one hour on three successive days. They should be brought gradually to the boiling point and the 60 minutes should be counted after the boiling point has been reached. The bacterial life which causes spoiling of vegetables is not so easily killed as that which causes spoiling of fruits. In steam cookers where the temperature is maintained far above the boiling point, the process can be completed at one heating, but the three daily successive boilings are the only safe method to follow in the ordinary home canning. The Cultivator of July 2 had several instructive articles on canning of fruits and vegetables.

Cut open peppers, clean out seeds and cut in strips the size of a string bean. Pack into jars which have been rinsed in warm or cold water and cooled. Cover to the brim with salt water (one pound salt to seven gallons of water). Rinse cap in cold water and place on jar, but do not clasp or screw down, as the steam which forms inside must find an outlet. Use new rubbers. Place a board with holes in it or a few pieces of lath nailed crosswise in bottom of boiler. Set jars on this rack and pour water in, filling half way up on jars. Heat gradually to a boil, then boil for three hours. "Boiling" does not mean "simmering." Count time from the time water begins to boil and keep boiling steadily for one hour. Keep lid on boiler. Remove jars while boiling hot and set aside to cool. Do not set on a cold or wet surface or in a draft. Repeat this process the second and third days.

FOLDING DRESS SKIRTS.

To fold a dress skirt properly for packing and so avoid the crease down the middle of the front breadth, fasten the skirtband and pin the back to the middle of the band in front. Lay the skirt on a table or other flat surface, right side out, with the front breadth down. Smooth out all creases and lay folds flat. Then begin at the outer edges and roll each toward the center back until the two rolls meet. In this way the hang of the skirt is not injured, there are no wrinkles, and the front breadth is smooth and flat. If the skirt is too long for the trunk, fold it over near the top and place a roll of tissue paper under the fold.

THINK IT OUT.

Why is it that trained nurses are so attractive? I never saw an unattractive one, and some of them are "a joy forever." Is it health? Their study has taught them how to take care of themselves. Is it their immaculate costumes? Why shouldn't everybody be aseptically clean? Is it their mission which appeals to our sentiment? Why shouldn't everybody have a mission? After all, isn't that our real measure of beauty?—Delineator.

MIGHT EXPLAIN IT.

After spending the summer in a mountain hamlet in Tennessee the visitor hired a native to help pack up. As they were engaged in boxing a shelf of books the mountaineer remarked: "Somehow Ah never keered much foh books; but," he resumed after a thoughtful pause, "Ah can't read, an' mebbe that had sumpin' to do with it."

THE VALUE OF TIDINESS.

It has been said that women and girls who take pride in their personal appearance are at the very least one-fifth less in danger of infection by disease and are better able in the same proportion to successfully resist sickness than those that are untidy and careless.

It is not wise to stop the education of a boy or a girl with the body and to neglect the mind and the spirit. But we have done the equivalent of that in dealing with farm life. We have done more and have done it more effectively for the farmer along the line of better crops than any other nation. But we have done little and far less than many other nations for better business and better living on the farm.

"There are two sides to every argument," said the ready-made philosopher.

"Yes," replied the gloomy person, "but it makes a difference which side you choose. There are two sides to a piece of fly paper."—Washington Star.

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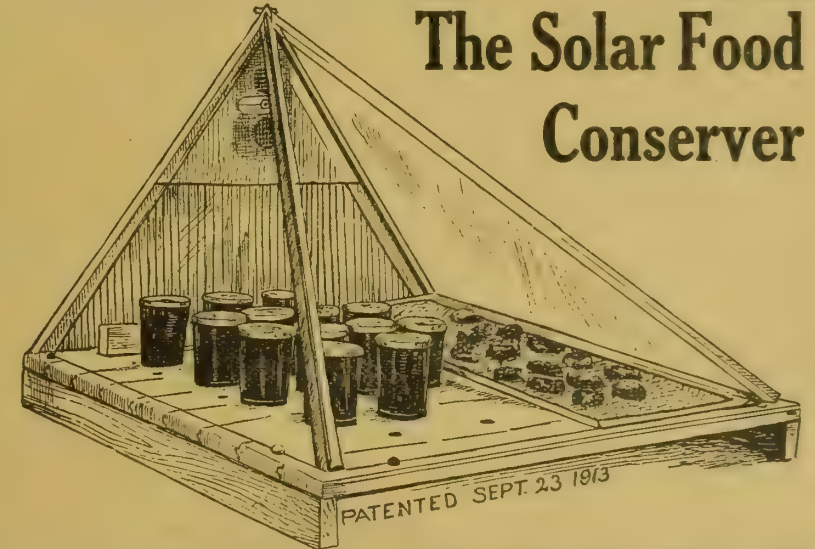

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San Francisco--Los Angeles Produce Markets

Los Angeles Market

LOS ANGELES, August 19, 1914.

The prices given below, except where otherwise noted, are those made by wholesale or commission houses to retailers, and are intended to give producers the range of the market rather than an indication of prices which they will secure. Jobbers' quotations to producers are not given.

BUTTER

Butter has advanced slightly and general firm condition prevails. Arrivals, 60,000 to 70,000 daily.

Prices to trade 4 cents above following quotations:

Creamery Extras	.26
Firsts	.24
Country	.21
Ladle	.20

CHEESE

Prices to trade 1 and 2 cents higher:

Eastern Daisy	.19
California Fresh	14½@15
Domestic Swiss	.19
Longhorn	.19½
Imported Swiss	.40
Oregon	17½@18

EGGS AND POULTRY

The demand for eggs is rather slow. Extras stand exactly as last week, though slight advances are noted on lower grades. Receipts are very light, some days running under 200 cases.

Prices to trade 3 cents higher than following quotations:

Fresh ranch, case counts	.34
Candled	36@37
Selected	.32½
Northern Case Count	.35
Petaluma-Santa Rosa	.36

Price to producer:

Hens, lb.	13@18
Roosters	.8
Broilers, lb.	.17
Fryers	.15
Roasters, lb.	.15
Turkeys	18@26
Ducks	.12
Geese	.14
Squabs, doz.	2.00

LIVE STOCK

The following quotations are f. o. b. Los Angeles on all stock:

Hogs, 175 to 200 lbs., per cwt	9.75
Prime Steers	.7½
Heifers	.6¼
Calves, lb.	.8½
Sheep—	
Ewes, head	4.00
Wethers	4.25@5.00
Lambs, head	4.00

POTATOES

Wholesale selling price:

Sweets, sack	2.50
News, cwt.	1.30@1.40
Northern Burbanks, cwt.	1.40@1.50
Highland, Burbanks	1.40
Shimas	1.70@1.75

ONIONS

Wholesale selling price:

Australian Brown	1.75
Silverskins	2.00@2.25
Yellow Danvers, sack	1.75
Garlic	10@12

VEGETABLES

Wholesale selling price:

Artichokes, Northern, doz.	90@1.00
Beets, doz.	30@35
Beans, String	3@4
Lima	3@4½
Cabbage	.75
Carrots, doz.	30@35
Cauliflower, doz.	1.25@1.35
Celery, doz.	50@60
Corn, Sugar, box	50@60
Field corn, sack	1.50@1.60
Cucumbers, lug	35@45
Pickling, lug	90@1.00
Egg Plant	4@5
Escarole, doz.	.40
Horseradish, lb.	.12
Leeks, doz.	35@40
Lettuce, crate	.85
Mint, doz.	35@40
Okra, lb.	7@8
Onions, Green, doz. bunches	15@20
Oyster Plant	25@30
Parsnips, doz.	25@30
Peas, lb.	6@7
Peppers	5@6
Bell, lb.	7@9
Chili, lb.	3@4
Radish, doz.	15@20
Rhubarb—	
Crimson Winter	70@80
Spinach, doz.	.20
Squash—	
Summer, lug	30@35
Crookneck	25@35
Turnips	30@35
Tomatoes, lug	25@40

FRESH FRUIT

Wholesale selling price:

Apples.	
Bellflowers	1.00@1.15
Gravensteins	1.00@1.25
Skinners' Seedlings	85@1.10
Apricots, lug	1.10@1.25
Bananas	3½@4
Berries—	
Strawberries, basket	3@4
Raspberries, basket	5@7
Blackberries, basket	4@5
Loganberries, basket	5@6
Cantaloupes—	
Locals, small	90@1.00
Locals, large	1.65@1.85
Casabas, doz.	65@1.25
Crabapples, box	1.00@1.35
Figs, 1-layer box	65@80
Grapes—	
Concord, crate	1.25@1.35
Black, lug	85@90
Malagas, crate	1.00
Isabella, crate	1.00
Nectarines, lug	90@1.20
Peaches, lug	65@90
Pears, Bartlett, box	1.10@1.25
Sickles	1.25@1.35
Burbanks	.75
Pineapples, lb.	6@7
Plums, lug	60@1.25
Quinces	75@80
Watermelons, lb.	1@1½

CITRUS FRUIT

Wholesale selling price:

Lemons	4.00@7.50
Grapefruit, Seedless	2.25@2.50
Valencias	1.75@2.50
Limes	1.50

DRIED FRUITS

Wholesale prices to retailers are:

Evaporated Apples, Fcy., lb. bxs.	10@12
Apricots	11@17½
Nectarines	.12½
Peaches	6½@7½
Pears	8@12
Prunes	6@17
Plums	.10

NUTS

Prices named by California Walnut Growers' Association are:

No. 1	.17½
Budded Walnuts	.21
No. 1 Soft Shell Walnuts	.16
No. 1 Hard Shell Walnuts	.15½
No. Twos	.11½

Wholesale price:

Almonds—	
I X L	22@23
N P U	21@21½
Drakes, Thin Shells	18@19
Pecans	.16
Peanuts—	
California, Raw	.6
Japan	.7½
Eastern	.7½
Pine Nuts	15@16
Rice Corn	5.00@5.25

HONEY

Wholesale selling price:

Comb, Fancy, Water White	.15
White	.13
Light Amber	11@12
Extr. Water White	.8
White	.7½
Light Amber	.7
Beeswax	.35

BEANS

Wholesale selling price:

Producer's price not far from one dollar under these quotations:

Limas	8.25@8.50
Lady Washington	5.50@5.60
Black Eyes	7.50@8.00
Pinks	5.00@5.35
Lentils	7.00@8.00
Small White	6.50@6.75
Garbanzos	8.00@8.50

RICE

Wholesale selling price:

California	3.50
Broken	3.00@3.75

HAY

Buying prices f. o. b. cars Los Angeles:

Barley	10.00@11.00
Wheat Hay	10.00@11.00
Tame Oat	11.00@13.00
Alfalfa	9.00@11.00

GRAIN

Wholesale selling prices f. o. b. Los Angeles:

Corn, Yellow	2.20
Corn, White	2.30
Wheat	1.95
Oats, Red	2.35
Oats, White	1.60
Kaffir Corn	1.90
Millet	3.75
Popcorn	4.75@5.00
Egyptian Corn	2.30
Barley Seed	1.45
Milo Maize	2.00
Cal. Seed Oats	2.25
Sunflower Seed	5.25@5.35

FEED STUFF

Wholesale selling prices f. o. b. Los Angeles:

Bran, Heavy	1.75
Alfalfa Meal	1.05
Alfalfa Syrup, per cwt.	1.05
Beef Scraps	3.00@3.10
Beet Pulp	1.25
Cracked Corn, cwt.	2.25
Feed Meal, cwt.	2.30
Cotton Seed Meal	1.85
Blood Meal	3.60@3.70
Bone Meal	2.00@2.10
Charcoal	1.90@2.00
Bone Green	1.95@2.05
Cracked Wheat, cwt.	2.10
Oil Cake Meal	2.05
Fish Meal	3.15@3.25
Rolled Oats	1.65
Rolled Barley	1.25
Middlings	2.00

San Francisco Market

SAN FRANCISCO, August 18, 1914.

The prices given below, except where otherwise noted, are those made by wholesale or commission houses to retailers, and are intended to give producers the range of the market rather than an indication of prices which they will secure. Jobbers' quotations to producers are not given.

BUTTER

Best grades butter commanding increase. Market very firm. But little stock offered.

Prices to trade 4 cents above following quotations:

Extras	.28
Prime Firsts	.26
Firsts	.24
Seconds	.21½

CHEESE

Wholesaler to retailer.

California Y, America	14½@15½
California Flats	11@14½
Cheddar	.20
Oregon Twins	.15½

EGGS AND POULTRY

Arrivals of eggs very light. Market firm.

Prices to trade 3 cents higher than following quotations:

Extras	.34
Firsts	.28
Select Pullets, lb.	.27
Hens	15@18
Fryers	20@21
Roosters, old	.12
Roosters, young	22@23
Broilers	18@20
Belgian Hares, lb.	10@13

LIVE STOCK

San Francisco prices, gross weight:

Steers	4@6¾
Cows and Heifers	3@6
Calves, lb., live weight	6@9
Hogs	8@9
Wethers	5@5½
Ewes	4@4½
Milk Lambs	6½@7½

POTATOES

Wholesale selling price:

Delta, Burbanks	75@1.00
New Potatoes, lb.	1@1¼
Sweets, lb	1½@2

ONIONS

Wholesale selling price:

Yellow, sack	70@90
Garlic, new	12½@15

VEGETABLES

Wholesale selling price:

Beans—	
Limas, lb.	5@6
Wax, lb.	1@2½
Strings	1@2½
Cabbage, cwt.	1.00@1.25
Carrots, sack	35@50
Corn, Green, sack	75@1.00
Cucumbers, lug	15@25
Egg Plant, lug	35@50
Peas, lb.	3@3½
Peppers—	
Bell, lug	25@40
Chili, lug	25@35
Rhubarb, box	60@1.00
Tomatoes, lug	30@50

FRESH FRUIT

Wholesale selling price:

Apples—	
Alexander	50@75
Gravensteins	25@75
Blackberries, chest	75@1.75
Bananas, Hawaiian, bunch	1.25@1.75
Cantaloupes, crate	30@65
Ponies	30@35
Delta, lug	20@30
Casabas	50@75
Crabapples	30@85
Figs—	
Black, box, single layer	30@35
Black, double layer	40@90
White, box, single layer	40@65
Grapes—	
Black	25@40
Tokay	75@1.00
Seedless	50@75
Malagas	40@60
Muscats	40@60
Huckleberries, lb.	8@12½
Nectarines, crate	50@1.00
Peaches, crate	25@85
Lugs	40@60
Pears, box, small	50@75
Large, wrapped	60@1.25
Plums, crate	40@80
Lug	75@1.25
Pineapples, Hawaiian, doz.	1.50@2.00
Prunes, crate	60@1.00
Quinces, box	50@85
Strawberries, chest	1.50@3.00
Watermelons, doz.	75@1.50

CITRUS FRUIT

Wholesale selling price:

Grapefruit, Seedless	1.00@2.50
Lemons	6.50@9.00
Lemonettes	5.00@6.00
Limes, cs.	4.00@5.50
Valencias	1.75@2.50

DRIED FRUITS

Wholesale prices are:

Prunes—1913 crop, bulk basis: 30s-40s, 7c; 40-50s, 7c; 50-60s, 7c; 60-70s, 7c; 70-80s, 7c; 80-90s, 5¾c; 90-100s, 5½c. The above are for both Santa Clara and outside; 1912 crop worth practically as much as the new crop: 20-30s, 15c in 25-lb. boxes.

Other Fruits. 50-lb. Boxes—	Standard	Ch.	Extra Ch.	Fcy.
Evap. Apples	....	9 c	9½c	10c
Peaches	....	5 c	5¼	6c
Pears	8½c	9 c	10 c	....

RAISINS

The following prices are f. o. b. Fresno, as given out by the Associated Raisin Company On and after August 8, 1914, the price of 1-crown loose Muscatels, in 50-pound boxes, will be as follows: 1912 crop, 4½ cents; 1913 crop, 4¾ cents. Seeded, fancy, 16-oz. pkgs, 7½c; do. 12-oz., 6c; do. bulk, 6¾c; do, choice, 16-oz., 7c, do, 12-oz., 5¾c; do, bulk, 6½c; Sultanas, no stock; Thompson Seedless, unbleached, 50s, 6c; 16-oz., 7⅛c; 12-oz., 5&c; recleaned, ¼c advance; do, floated, ½c advance; London Layers, no stock. Local representatives of the Association are asking ¼c higher, while several of the large packers are quoting ⅛c under the Association's figures.

The California Associated Raisin company has issued a price list dated May 28th, on the 1914 crop.

3 Crown London Layers, 20 lb. box, $1.15. 4 Crown Cluster, $1.40. 5 Crown Dehesa Clusters, $2.00. 6 Crown Imperial Clusters, $2.50. 5-lb. boxes, 50c extra; 10-lb. boxes, 25c additional Fancy Clusters, 1-lb. cartons, 20 to the box, $1.65. Fancy Clusters, 2-lb. cartons, 12 to the box, $2. Fancy Clusters, 5-lb. cardboard cartons, 4 to the box, $2.25. Bulk Layers in 50-lb. cases, $2.50. All prices guaranteed against decline to January 1, 1915, and subject to advance without notice."

NUTS

Wholesale selling price:

Peanuts—	
Unpolished	5@6
Polished	6@6½
Japanese, Shelled	6¼@6¾
Italian Chestnuts	6½@7

BEANS

Wholesale selling price:

Limas	7.50@7.75
Pink	4.50@4.85
Black Eyes	6.25@6.50
Cranberry	5.50@5.75
Small white	5.90@6.10
Garbanzos	6.75@7.00
Large white	4.75@5.25
Bayou	4.25@4.50
Manchurian Speckled Bayous	4.40@4.60
Manchurian Butters	4.60@4.80
Manchurian Cranberry	4.00@4.25
Red Mexican	5.25
Horse Beans	1.90@2.00

HONEY
1913

Comb, Water White	14@15
Amber	12@15
Dark	10@11
Extracted White	7½@8
Light Amber	.6½
Dark	3½@4
Beeswax	27@32

HOPS
1913

Sacramento Valley	14@15
Sonoma-Mendocino	15@16
Oregon Clusters	14½@16
1914 Contracts	15@16

HAY

Under date of August 15 Scott, Magner & Miller say:

Receipts of hay for the past week, 4234 tons, the same as the previous week. Receipts of choice grades are light, and these are the only grades that are moving. Alfalfa conditions are about the same as grain hay. Shipments, however, are beginning to increase. Straw is offering from many points but demand for same is light.

We quote the average wholesale prices on carload lots of hay on today's market as follows:

Fancy Wheat Hay, lt. bales	11.00@12.00
No. 1 Wheat or Wheat and Oat	8.00@9.00
No. 2 Wheat or Wheat and Oat	6.00@7.50
Choice Tame Oat	10.00@11.00
Other Tame Oat	7.00@9.00
Barley	6.00@8.00
Wild Oat	6.00@8.00
Alfalfa	6.00@9.00
Stock Hay	4.50@5.00
Straw, new	40@45

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WEATHER CONDITIONS

For week ending Saturday, August 15, 1914.

Report from the various stations of the U. S. Weather Bureau, by Geo. H. Wilson, director, San Francisco:

	Rainfall Data			Temperature Data.	
	Past Week.	Seasonal to Date.	Normal to Date.	Maximum.	Minimum.
Eureka	.00	.01	.14	62	50
Red Bluff	.00	.00	.00	104	64
Sacramento	.00	.00	.00	96	56
San Francisco	.00	.02	.01	64	52
San Jose	.00	.00	.01	80	52
Fresno	.00	T	.00	104	64
Independence	.00	.06	.00	98	60
San Luis Obispo	.00	.00	.03	86	56
Los Angeles	.00	.01	.00	84	56
San Diego	.00	.00	.00	72	60

T means trace.

GRAIN

Wheat, Cal. Club	1.55@1.57½
Corn, Eastern Yellow, blk.	1.80@1.90
Egyptian, White Corn	1.70@1.72½
Barley, Feed	.95@1.00
Oats, white	1.22½@1.25
Oats, red	1.15@1.17½
Millet	2¾@3
Flaxseed, lb.	4½@5
Mustard, Brown	4@4¼
Rye	1.50@1.55
Sunflower	5@5½
Vetch Seed	3@3½

FEED STUFF

Alfalfa Meal, car lots	11.50@12.50
Bran, ton	25.50@26.50
Feed Cornmeal, ton	41.50@42.00
Cracked Corn	41.50@42.00
Rolled Barley, ton	21.50@22.50
Rolled Oats, ton	37.00@37.50
Midddlings	31.50@32.50
Shorts	27.00@28.00
Oilcake Meal	32.00@33.50
Cocoanut Oilcake Meal	25.00@26.00
Linseed Oilcake Meal	27.00@28.00

Citrus Fruit Market

LOS ANGELES August 19, 1914.

The orange market has not dropped as severely as was feared a week ago, though the market is somewhat easier and no purchases made other than actual daily needs. The hope now is that no very serious slump will be made.

Lemons are still commanding abnormal prices. Receipts of foreigns have entirely ceased and the heavier picking of Californias will not begin until October. Until that time shipments from California will be exceedingly light.

Shipments.

Shipments of citrus fruit from Southern California points since November 1, 1913, are: Oranges, 35,065 cars; lemons, 2,576; total, 37,641; to same date last season, oranges, 12,614; lemons, 1,972; total, 14,586. Total shipments of all citrus fruits two years ago this date, 32,927 cars.

NEW YORK, Aug. 17.—Twenty cars Valencias sold, one mixed car. Market firm, prices slightly higher. Partly cloudy.

VALENCIAS—	Avge.
Mount of Olives, Growers Ft. Co.	$3.40
Olive Heights, Growers Ft. Co.	3.00
Angelus Growers Ft. Co.	2.70
Euclid, Growers Ft. Co.	2.90
Uplander, Growers Ft. Co.	2.55
Old Mission, xfy, C. C. Chapman	3.85
Old Mission, fy., C. C. Chapman	3.10
Golden Eagle, sd., C. C. Chapman	2.60
Queen Louise, xfy., L. Villa Ranch	3.00
ST. MICHAELS—	
Altura	$2.00
Viking	2.20
GRAPEFRUIT—	
Squirrel (seedless)	$1.40
Prairie Chicken (seedless)	1.00
Viking (seedless)	.50

BOSTON, Aug. 17.—Nine cars oranges sold. Cloudy and muggy. Unchanged.

VALENCIAS—	Avge.
Alhambra, S. T., Alhambra	$2.75
Quality, S. T., Nordhoff	2.50
Campfire, S. T., Nordhoff	2.15
Stag, A. C. G., Azusa	2.90
Pointer, A. C. G., Azusa	2.40
Hunter, A. C. G., Azusa	1.40
Glen Home, A. C. G., Glendora	3.00
Blue Hussar, O. K., Alta Loma	2.75
Red Hussar, O. K., Alta Loma	2.50
Carmencita, S. T., Placentia	2.80
Colombo, S. T., Placentia	1.90
Eagle, A. F., Highgrove	2.65
GRAPEFRUIT—	
Quality	$ .45
Colombo	1.30
Glen Home	1.45
Blue Hussar (seedless)	1.35
GRAPEFRUIT—HALVES—	
Orchard (seedless)	$1.90

CLEVELAND, Aug. 17—Three cars Valencias and one car sweets sold. Declining. Warm.

VALENCIAS—	Avge.
Echo, S. T., Pasadena	$2.90
Arroyo, S. T., Pasadena	2.50
Ben Hur, R. H., Redlands	2.80
Sappho	2.50
GRAPEFRUIT—	
Royal Knight (seedless)	$1.20

CHICAGO, Aug. 17.—New apples, 1.00 @3.50 per barrel; lemons, California, 4.50@6.00 per box; oranges, 3.25@3.50; pineapples, per crate, $1.50@3.50; Calif. apricots, per box, 75@1.25; peaches, 90 @1.25; plums, 85@1.50 per crate; pears, 2.25@2.50 per box; grapes, 2.00@3.25 per case; lima beans, 35 per quart; onions, 1.00@2.00 per sack; peppers, 15@ 40 per case.

PITTSBURGH, Aug. 17.—Four cars oranges sold. Warm.

VALENCIAS—	Avge.
Maltese, D. M., Monrovia	$2.35
Violet, D. M., Monrovia	2.65
Anoakia, D. M., Monrovia	2.15
Colombo, S. T., Placentia	2.35
Las Palmas, S. T., Placentia	2.35
Jasmine, D. M., Monrovia	2.25
GRAPEFRUIT—	
Orchard	$1.60

ST. LOUIS, Aug. 17.—Clear and warm. Market easier on oranges; weak on lemons. Five cars oranges and one car lemons sold.

VALENCIAS—	Avge.
Green Crown, A. C. G., Azusa	$2.00
Hunter, A. C. G., Lateen Spur	2.40
S. S., O. R. Orange	2.20
Brownie, Rialto Ft. Co.	2.15
Red Wing	2.60

CINCINNATI, Aug. 17.—Warm. Declining. Three cars Valencias so'd.

VALENCIAS—	Avge.
Green Crown, A. C. G., Azusa	$2.40
Red Riding Hood, S. D., C. Oak	2.00
Nacional, Harper Ft. Co.	2.70
Duluce, Harper Ft. Co.	2.25

PHILADELPHIA, Aug. 17.—Nine cars sold. Hot. Steady.

VALENCIAS—	Avge.
Cornell, S. A., Walnut	$2.70
Green & Gold, S. A. Walnut	2.30
Trial, A. C. G., Lamanda Park	2.80
Canyon, A. C. G., Lamanda Park	2.35
Lincoln, A. H., Casa Blança	2.50
Navajo, A. H., Casa Blanca	2.15

"FIRST AID" TO THE SICK HEN

(Continued from Page 179.)

gap, and the mass will be in plain sight.. With toothpicks, tweezers or similar tools take out the contents of the crop and make sure that there is nothing remaining to obstruct the out let to the organ. To close, take three or four stitches in the opening in the crop, making each stitch by itself and tying a knot that will not slip. Then do the same thing to the cut in the skin. For the stitches use white silk if possible, if not, No. 60 white cotton will do."

The list might be continued, but these are the most common diseases, and there are few other things an amateur is likely to be called on to treat Everyone who keeps poultry should have by him some poultry or doctor book giving symptoms and treatment of poultry diseases, and there is nothing better than Farmer's Bulletin 530 on "Important Poultry Diseases," which may be had for nothing by writing to Department of Agriculture, Washington.

The number of women who continue to hold wage-earning positions or practice a profession after they are married is now so large that an apartment house is already building in New York for the express requirements of the families to which they belong, says the Youth's Companion. It will contain about four hundred rooms, arranged in suites of one to four, with a bath. The staff of employees will include teachers and attendants to care for children; cooks, who will prepare the food in a central kitchen and send it up to the tenants in electric elevators; menders, to keep clothing in repair; and skilled laundresses. All of these conveniences the tenants will get at cost. Many applications for suites have already been received.

It will be news to many—for the act has attracted a curiously small amount of attention—that the British government has abolished prize money in the navy. It had done away with it in the army sometime before. The recent action, therefore, ends the chance of British soldiers and sailors to profit personally from the spoils of war. Private interest in pillage, spurred by liberal allowances of "grog," has written some dark chapters of history—and written them in blood. It was high time to write finis.

Lucky the cause, or the party, or the administration that has a good, lively opposition. In government and in reform, in life generally, what comes easily is likely to come ill. Where every inch must be fought for, it will usually be worth gaining. Where every clause of every measure is contested, the finished product may stand wear. The world seldom appreciates what it owes to beaten contestants, but the truth is that they carry nearly half the load.

Speaking of health—most people don't need constitution as much as they need by-laws.

It isn't all in knowing how to swim —it's swimming that counts.

RURAL SCHOOL GROUNDS

(Continued from Page 177.)

10 years land values in one such district have, to the positive knowledge of the writer, risen from $175 to $3000 per acre, for it was offered to me at the former price and I saw it sold for the latter sum. The Committee for the Beautification of Los Angeles County in 1915 is willing to send expert advisers, free of cost, to tell you how best, at the lowest cost, to improve and beautify your local schoolgrounds. To encourage every community they are offering $7000 in cash prizes for the most and best improvement shown from the present to the end of 1915. This sum is so divided that competition is arranged in classes so that the humblest school stands equal chance with the grandest of winning a prize, and of equal amount. Is your school in the race If not, why not? The competition is still open. Get in line at once.

The Wrong Attitude.

Too many garden as though the main or central idea is to water, water, water. Some of our least successful growers of citrus fruits seem imbued with the same thoughts.

Irrigation or flooding or sprinkling is a special practice to be avoided if possible and reduced to a minimum at all times. 'He is the best helmsman, who uses the wheel the least," could be paraphased to fit our case. The first and most important duty of the grower of any crop is to render water as nearly unnecessary as is possible. So fit the soil and manipulate it that your plants will not need watering. This is not an easy task with acreage, but in a small garden it is not a hard problem. Introduce humus and stir the soil; stir it all the time, it cannot be overdone.

Never mind "burning up humus;' keep cultivating.

Children's Gardens.

In this era of school gardens, it is not enough to encourage gardening at school; every child should have an opportunity to garden at home. They should be allowed to grow whatever suits them best, and in the way that pleases them most. It really matters little what they grow or how they grow it, so long as they make an honest effort. "The attitude's the thing." Their interest in plants and gardens should be encouraged in every way possible. Therefore see that the child's garden contains good rich soil and that all necessary equipment and proper tools are available. Let them experiment all they wish to; they may discover some things of worth unknown to their parents.

Water Gardens.

Many who would like to have a water garden are deterred from the attempt through fear of instituting a mosquito hatchery. Mosquitoes lay their eggs upon the surface of still water and a few days later the water is full of the resultant "wigglers" or larvae. In ponds where goldfish are kept no adult mosquitoes are found for they never pass the larval stage, even in case eggs may reach the water. I have taken a cupful of water teeming with "wigglers," poured it into a bowl containing four goldfish and watched the latter dispose of about 50 of the former in a few moments.. Do not let fear of mosquitoes prevent the building of a water garden.

Formal Gardens.

Formal gardens are for the city rather than the country, but in either case, they must be in connection with other architecture—close to the house. In the country harmony with surroundings is a primary consideration, therefore, the front yard should not be given up to formality. At one side, or even in the rear, is a far better place for formality. If attractive broken topography or native shrubbery or any beauties or charms of nature would have to be destroyed to make room therefor, better leave out all thoughts of a formal garden. We cannot afford to sacrifice natural beauty for anything man could replace it with.

Japanese Gardens.

Those who would build Japanese gardens, should remember that the fundamental basis is absurdity. Aim to crowd into 50 or 100 feet square all the detail you may find in a rugged and varied landscape of five or ten acres, if plenty of stones are present. For remember, you cannot build a Japanese garden without stones. You may do without wistarieas, bamboos, bridges, pagodas, etc., etc., but stones and water must be present. The stones should not be of our round boulder type, if avoidable, nor should they be of granite, but of some more or less absorbent composition or base so that they become moss-covered or time-stained. It is not necessary to use numbers of expensive dwarf or distorted trees, or even plants native to Japan. In a public park, however, the exclusive use of Japanese vegetation has an educational value and an attraction which should not be ignored.

Japanese Vegetation.

In building Japanese gardens, the following list of plants may be used: aralias, azaleas, bamboos, camellias, chrysanthemums (a few only), dwarf flowering almonds, cherries, etc, ferns, grasses (for pond margins), lilies, lotus, mosses, nandinas, pines (stunted, distorted, or mutilated), and the necessary wistaria. Pines should dominate and flowers should be few, for Japanese gardens should undergo little change throughout the year.

Grow Gypsophila.

In place of ferns or filmy foliage, grow the spray-like Gypsophlia or "Baby's Breath" to mix with larger and coarser flowers. It is used by all florists, in all countries. It is peculiarly suitable for California in-asmuch as it will grow and bloom almost without use of water. In drouth-resistant plants it stands near the head of the list.

SHEEP ON THE SMALL RANCH

(Continued from Page 183.)

indicate that it would pay. Figures are given in these reports in such a way that the farmer may calculate for himself, using the needs for 100 pounds of grain with his knowledge of the price of barley and the selling price of the lambs. As to hay, alfalfa is the best that can be grown—nothing excels it for sheep. But it is not wise to pasture sheep in alfalfa because they are such close croppers, likewise, if allowed to run on alfalfa when it is green and luxuriant, they are subject to bloat.

About this time of the moon, or any other for that matter, the wise farmer will be on the lookout for a sleek, oily gentleman trying to sell him something that will make him rich in a hurry. It is also well to have a chainless man-devouring bull pup handy.—Farm, Stock and Home.

THE YUBA BALL TREAD TRACTOR

how is your farm equipped?

Mechanical equipment is a constant problem to the industrial manufacturer. To meet increased cost of raw materials and labor he must have machinery more powerful, compacter, less liable to break down, easier and cheaper to operate and maintain, and faster in completing each operation.

The farmer has the same problems and the same needs.

THE YUBA BALL TREAD TRACTOR

Horses are expensive as hauling power producers. With a tractor the cost becomes less. With a Yuba Ball Tread Tractor the cost is reduced to a minimum.

This booklet, entitled "The Yuba Ball Tread Tractor," explains how. The coupon, filled out, brings it.

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THE YUBA CONSTRUCTION CO.
433 California St., San Francisco
Dept. D1

Gentlemen: Kindly send me a copy of your booklet "The Yuba Ball Tread Tractor."

Name.. *Address*..

Size of Farm.................. *Acres.* *(Check main crop raised.)*

Fruit	*Rice* ....
Grapes..................	*Alfalfa* ....
Grain	*Hops* ....
Hay	....

—He Bought 440 Acres Of Milford Valley Land!

—read his conservative letter (below) to a friend in Imperial Valley.

The letter and picture of Mr. Austin are reproduced by permission.

F. J. AUSTIN, MOTORING OVER HIS LAND IN MILFORD VALLEY

Milford, Utah, Aug. 4, 1914.

Mr. William Belford,
Alamorio, Cal.

My Dear Sir:

I want to give you a true idea of the Milford Valley project. Looking out from the town of Milford toward the company's lands you see a mile of green, grassy land, pasturing cattle and horses. Beyond, rising abruptly 3500 feet, is a partially green mountain range, making the most pleasing new country that I ever saw. The soil is a rich, reddish loam, without rocks. It doesn't get hard when dry, nor sticky when wet.

As to the dam, it is about 1100 feet long, 300 feet wide at the base and about 68 feet high. A tunnel was blasted through the solid rock, the river turned through the tunnel, and the dam built across the river bed. They built three cement walls upon bedrock and filled in between the walls with wet dirt and rolled it down with a heavy roller. They have also protected the water side of the dam with a rock "rip-rap" two and one-half feet thick.

Several of the recent purchasers have a fine crop of oats growing on the new land already. also potatoes, which are looking good. Adjoining the lands of the project is land that has been farmed for forty years, and the crops are in excellent condition. I believe these people when they tell me that alfalfa runs five and six tons to the acre, oats 80 bushels and wheat 40 bushels. The fruit trees, cherries, apples, pears, peaches and plums, are loaded with fruit. I have never seen finer gardens anywhere. The price of all farm products here is high, and I think it will remain so, as a very limited amount of land here can be brought into cultivation. The old lands are now selling at $200 and up per acre (15 to 30 miles from the railroad) and I see no reason why the new lands, closer in, should not bring as much or more when under cultivation.

Yours very truly,
F. J. AUSTIN.

$30 an Acre on Main Line of Salt Lake R. R.

Water Right $70 per Share—12 Years' Time, if Desired

The above letter was written by a conservative ex-Imperial Valley farmer —a well-to-do man who was in a position to select any land he desired in the entire west. That Mr. Austin purchased 440 acres of Milford Valley lands **a short time after his arrival on the ground** is the greatest advertisement that could be desired for the project.

Write or call for illustrated booklet and all specific information. Special homeseekers' excursions Wednesdays and Saturdays at low rates from Los Angeles.

Western Securities Company,
710-712 Hollingsworth Building,
Los Angeles, California

Surface Pipe

A man may be bright, brainy, capable, but if he hasn't the constitution to stand hard work, his abilities are of little worth.

The same applies to Surface Irrigation Pipe, if you don't get the kind that is built, not slapped together, you are pulling the wool over no one's eyes but your own.

Our material was on the market when half the new concerns were still in their cradles.

Don't you think that these years of experience mean something to you?

If you must irrigate, get our prices and see the class of goods we turn out.

SURFACE PIPE CO., 201 Howard St., San Francisco

PIPE Second Hand

SCREW CASING

Alexander Pipe Company

OFFICE—254 No. Point Street, San Francisco, Cal.—WORKS 1611 E. 6th Street, Los Angeles, Cal.

SEMPERVIRENS CACTUS FARM

JOHN ZUUR, Proprietor

Ask for 1914 Catalogue ***SANTA ROSA, CAL.***

UNIVERSITY OF ILLINOIS

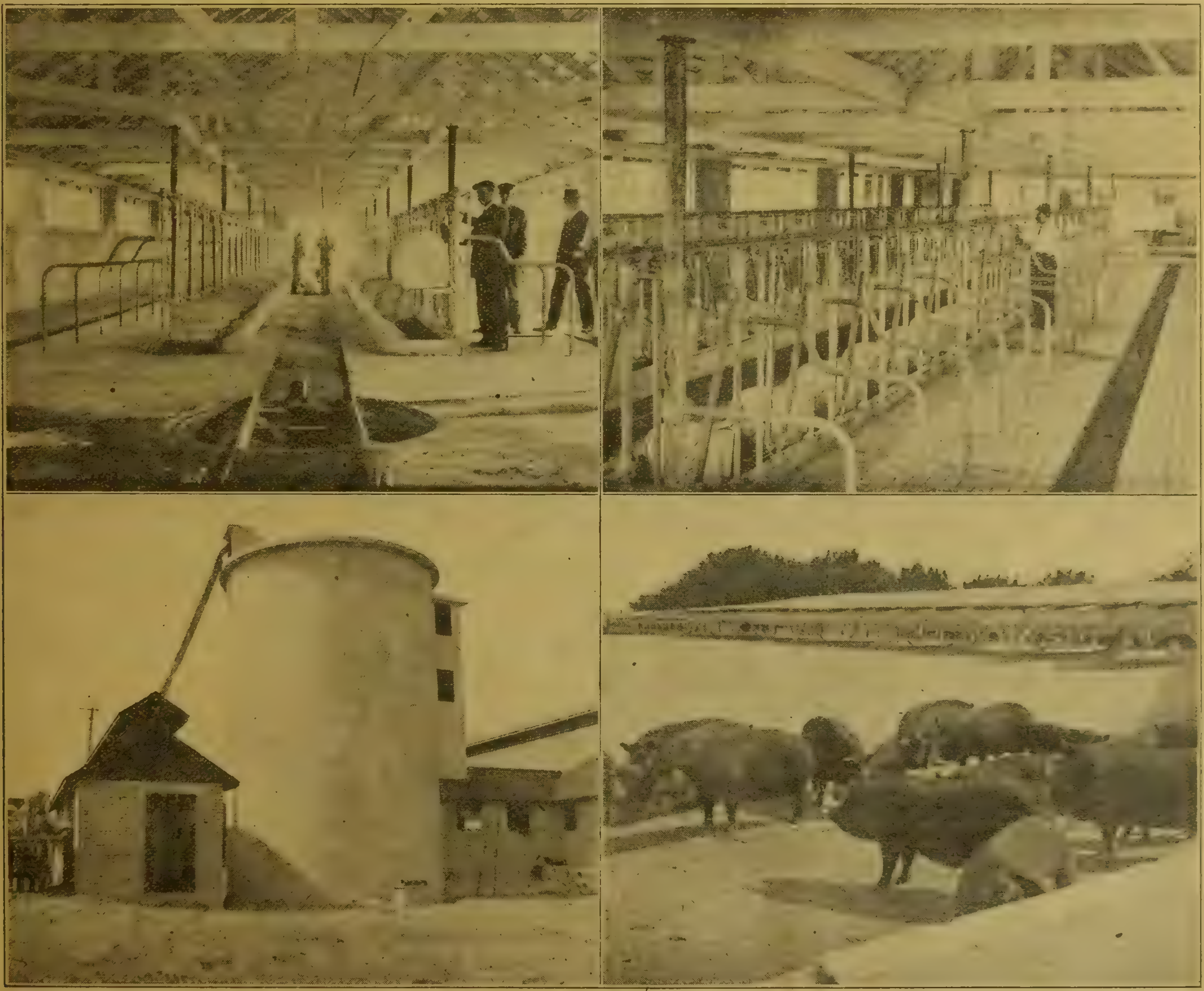
CALIFORNIA CULTIVATOR

Rural Californian combined with California Cultivator

An Illustrated Weekly Magazine, Devoted to the Rural Home and Ranch

LOS ANGELES August 27, 1914 SAN FRANCISCO

Fine Dairy Barn at Whittier



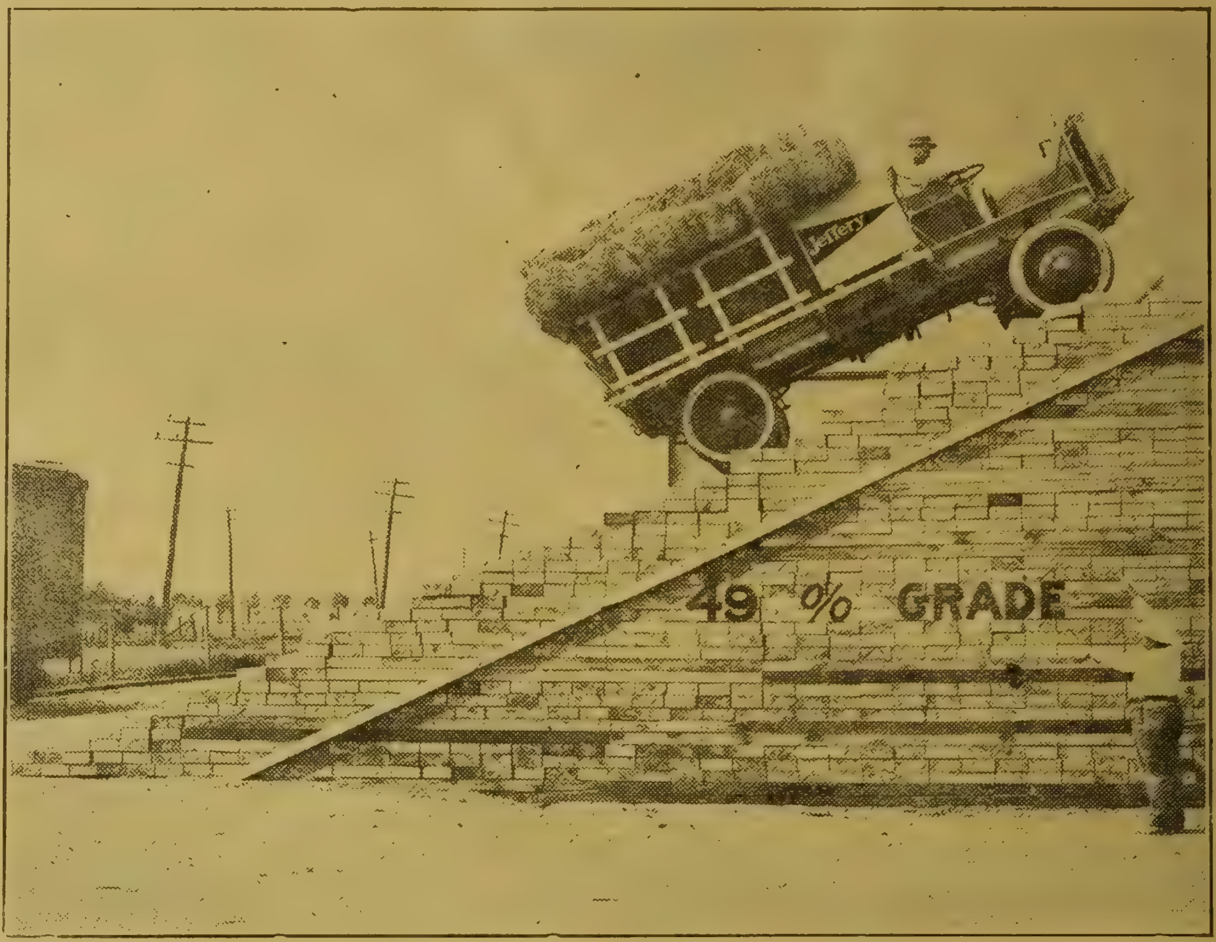
The state school has just installed a dairy barn which is a model as to economic labor possibilities. The first picture shows trackage with turntable; also construction of mangers. The upper picture at right shows up-to-date stanchions with gutter for flushing away refuse. The silo speaks for itself. The last picture shows the concrete hog pen with reinforced separating walls, so constructed that flushing is possible, the waste going to irrigating ditches and off to the fields.

The "Quad" Truck

Drives--Brakes--Steers--on all Four Wheels

Chassis $2950, Los Angeles

A Demonstration Will Convince



Seeing is Believing

The efficiency of all modern armies is based upon their mobility, and it is well known that animal-drawn transportation has been a serious drawback to the development of mobility. A motor truck can, under the most adverse conditions, cover a distance much greater than can be covered by any body of troops either mounted or on foot; furthermore, practical demonstration has shown that with careful handling, the cost of operating animal drawn vehicles is distinctly greater than that of the motor vehicle.

No truck has yet been developed, with the exception of the Jeffery Quadruple Drive, which could possible meet and conquer all bad road or other adverse conditions which inevitably confront troops in active service. The Jeffery Quad Truck does not need a road made for it as it is fully capable of making its own. It will operate over ploughed fields, and, provided with a holding bottom, it can cross a stream 34 inches in depth without flooding the carburetor. The inability to ford streams has previously been one of the greatest arguments against the adoption of the motor truck in the army or for farming purposes.

The truck can turn in a circle of 42 feet, has a clearance of 15¼ inches under the axles and 24 inches under the transmission. This excess clearance is of the greatest possible value for broken country and over rocky roads, through canyons and on stumpy ground. The Jeffery Quad Truck is designed to, and will actually in service, carry 4,000 pounds of dead load where four mules cannot drag the equivalent.

The Jeffery Quad Truck is not new. It has been in the service of the United States Army since September first, 1913, and on the roads and in test under the supervision of the Jeffery engineers for over a year and a half. It is the only truck now produced in America that is capable of hauling its capacity load, and a five ton trailer loaded to capacity, out of a cultivated orange orchard or a sandy alfalfa field. Space prohibits giving the specifications and all the uses of the Quad Truck. We would be glad to arrange a demonstration or mail catalog upon request.

The Thomas B. Jeffery Company, of Kenosha, Wis., who own and operate the largest factory in the United States building motor cars and trucks, that have a price range of from $1450.00 to $3000.00, have a plant covering 162 acres. The factory building is under glass, covering 26 acres. They are building a complete line of high grade, medium priced motor cars and trucks.

The Jeffery Four—the car that introduced the light weight, high speed, economical motor in America, selling at $1575; the new Chesterfield Light Six—the last word in Sixes, selling at $1775—Los Angeles; the Chesterfield Big Six—a comfortable, roomy up-to-date, seven passenger car—$2550—Los Angeles; the ¾-ton, 1-ton and 1½-ton trucks chassis, prices, Los Angeles, respectively, $1450, $1650 and $1800, with the different types of bodies—Roadster, Touring Car, All-weather Car, Sedan and Limousine—on the touring chassis, and the Open Express, Flare Board, combination Express and Stake, Platform Stake, Canopy Top, Wire Side, etc., on the truck chassis—make up this line of carefully produced, economical to operate, motor cars.

In future, we would strongly advise those contemplating the purchase of a motor car to get over the habit of judging quality by price. Get from some expert mechanic a statement of the things that a good car should have and then start out to find the car that has them, and, when you come to the Jeffery, you will be astonished at the quality, when you take the price into consideration.

It will give us much pleasure, upon request, to mail a catalog descriptive of our touring cars and roadsters.

Write for Catalogue

The W. K. Cowan Company

Phone for Demonstration

1140 So. Hope Street, Los Angeles

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California Cultivator
Rural Californian combined with California Cultivator
Vol. XLIII No. 9 LOS ANGELES: THURSDAY, AUGUST 27, 1914 One Dollar Yearly

Farming at a State School

The State School for Boys at Whittier Has Just Installed a Dairy Barn which may well be Called a Model in Efficiency and Construction. Practical Education Being Received by Boys, Which is Making Better Citizens

Not all California boys are born in the wholesome environment of farm life. Too many begin their training for life's work under conditions tending toward a life in which industry is not the principal factor, and sometimes these boys start or give indications, at least, that they will start in the wrong direction. These are sometimes placed in schools which are maintained by the state at Whittier in the southern end of the state or at Ione in the northern part.

It was our pleasure a few days ago to make a short inspection of some of the work being done by the boys at Whittier. The photos on the cover page of this issue give something of an idea of the practical work which they are permitted to do with practical, up-to-date appliances. At this school there are 150 attendants, and while the school feature is a prominent one, there is so much of real work that it has become more like a large farm home than a school. The boys are placed on their honor and inspired to take pride in their work. Some work on the farm, some in the printing office, some in the tailor or shoe shops, others engage in carpentry, gardening, floriculture, and various other callings. At the time of our visit the farmer boys were putting up silage. One of the photos shows the work in progress and the well constructed silo into which the corn is being lifted. Inside the silo were an even dozen boys engaged in tramping and packing. One of the interior views of the dairy barn shows the track leading from the silos to the turntable from which the car may be sent down between the rows of dairy cows or to the left to the stalls where the cows and calves are fed. The very latest in stanchions and manger appliances are used.

We take pleasure in referring to the dairy barn for the reason it is practical and did not cost as large a sum as some state buildings have. In fact the legislature made an appropriation of only $4000 for the building of the barn, silo and all. One administration of the school decided that the barn could not be built properly for such a sum and the money lay idle for some months. The necessity was so great, however, that Mr. Nellis, superintendent of the school, and Mr. Taylor, farmer, determined they would construct as much of a barn as they could. Sheds which were of no particular value on the farm were demolished and the second-hand roofs used in the construction of the new building. The foundation walls, floors and stanchions shown in the photographs are of very best construction, the silo is perfect in its appointments and arrangement, the accomodations for bulls and cows ready to calve are almost ideal, but economy marked the construction of the roof and upper structure, which may be replaced later if necessary. The entire structure cost less than $6000 and is a credit to those who planned it.

The dairy is stocked with pure bred Holsteins. There are about 30 cows in the milking string at the present time. The barn has a capacity of 48. The idea in using pure bred stock is that it is more profitable to the state to do so, as well as to the individual farmer. Males from producing strains are bringing to the state good prices, and Mr. Taylor informed us that almost every animal they have offered was quickly picked up.

A new feature in hog pens is shown in the photo on cover page. The fences between the various pens are of concrete, the entire floor is concrete, and in the center is a hog wallow or, more properly, a bathtub, with a shed running the entire length of the series of pens. Connected with each pen is another with sand bottom. The concrete pens can be flushed with water which is carried to the gutter at one side and off to irrigate field crops.

Productive Industry and the 8-Hour Bill

Address by Geo. W. Pierce at the Recent Fruit Growers Convention at Davis. The Bill Will be a Serious Handicap to all Farming Interests of California

California at the present time occupies a unique position. Through years of patient study and experimenting, the adaptability of our soil and climate to the production of an almost endless variety of fruit has been established beyond question. Intelligent planting coupled with expert care has brought the fruit output to such proportions that fruit is both abundant and cheap. Rich and poor alike revel in its enjoyment. The abundance, variety and excellence of our fruits have made California famous. Notwithstanding this, legislation is proposed at this time that if carried into effect will seriously handicap the fruit business.

If the fruit grower is to have so radical a departure from past and present customs injected into his business as is contemplated in the proposed universal eight-hour law, coupled with the possibilty later of the minimum wage scale, it is time to ask, "Is this the beginning of the end?"

The history of the California fruit industry has in it too many conspicuous failures, too many records of returns in red ink to warrant classing it in the list of over-lucrative occupations. If we are to have forced upon us a 75 per cent increase in the labor-cost of our products what compensating benefits are we offered? None. We were not considered, save as victims.

If this proposed law is what it purports to be, a measure for the benefit of the man who works for a wage, it is founded on a fallacious idea. It will kill the goose that lays the golden egg. it will put both employer and employee out of business. No efficient employee will be benefited by it. To force an inefficient employee on a grower, at a wage determined upon for an efficient workman is an imposition. It is unfair, un-American and degrading to the honest American wage earner.

Paternalism on the part of the government, to have any standing at all, should be founded on justice and equity. If minimum hours of labor and a minimum wage are to be established a measure defining minimum efficiency on the part of the laborer should also be established. Rate those unable to qualify as culls and let them market their labor for what it is worth. It is an injustice to the capable man to saddle upon him any part of the shortcomings of the drone. The mere fact that an animate thing bears the image of his creator is not the only credential he should be called upon to present, to qualify for a minimum wage. Wages should be based on efficiency and paid in proportion to the efficiency of the wage earner. Further, the employee should be held responsible for unnecessary loss occasioned by wilful negligence.

In effect the proposed measure will spell bankruptcy for the grower. Should any survive and produce fruit under the proposed conditions, to save themselves they would be forced to market their crop at a price so high that the demand would be small and the cost of selling heavy. Fruit would be a luxury. The demand for it would be greatly lessened. The state would be a party to the crippling of one of its leading industries. Fruit would be beyond the reach of the poorer classes. Forty-eight hours a week for the laborer in the orchards means forty-eight hours a week without fruit for the families of all laboring men. This is based on the assumption that the fruit industry is a legitimate and useful occupation, and that its annihilation would result in loss and discomfiture to the general public.

Few callings are as exacting as is the fruit industry at harvest time. The destiny of the financial outcome for the entire year is crowded into a few days. A surplus of efficient help at this time of year is never encountered. It is only by piece work, contract and other means that the grower is enabled to prevent heavy losses. Why handicap him further? If, in times of emergency and to save his crop, he pays his employees extra wages for overtime is it anybody's business save those of the contracting parties? It is safe to say that the orchard employee working by the day, who is overworked or who has suffered physically in the slightest degree is as hard to find as is the proverbial needle in the hay stack.

If we are to have an eight-hour day we should have eight-hour fruit. If forty-eight hours a week is all that men are to be permitted to work the fruit schedules of nature should be revised. Fruit should not be permitted to ripen save during forty-eight designated hours, during any one week. No doubt much valuable assistance in this work can be secured from the thoughful men who orginated the cause of our present alarm. If we are to accept as sound doctrine the theories of the walking delegate of the labor unions, we are forced to the conclusion that the Supreme Being, in creating fruit with its seven days a week ripening period, and the walking delegate with his forty-eight hour a week schedule, made at least one serious mistake.

Weather conditions, over which the grower can have no control, are leading factors in the ripening of fruit. At times the grower is rushed to pre-

(Continued on Page 202.)

CITRUS TREES

Buy from the largest Citrus Nurseries in the World

—and know what you are planting. Teague trees are better than others because scientifically grown. They are started right, grown right and shipped right. Ask for quotations.

We can supply all the STANDARD SORTS in almost any quantity—

ORANGES :: LEMONS
POMELOS

Teague trees are well rooted, strong and thrifty, free from scale, guaranteed true to name.

OUR BOOK "CITRUS FRUITS" — handsomely illustrated; a wealthy fund of accurate data —sent for 25c in stamps.

San Dimas Citrus Nurseries INC
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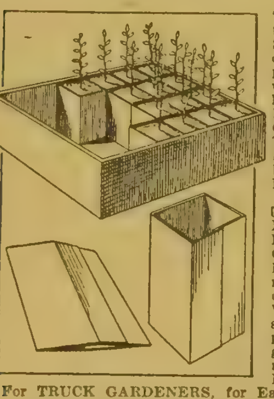

Collapsible Planting Pots

The only practical and SQUARE POT on the market, packs in FLATS without any loss of space. For Propagating OLIVE CUTTINGS, EUCALYPTUS, ROSES and PALMS.

THE MOST UP-TO-DATE METHOD FOR PROPAGATING PLANTS, no roots to be cut or torn apart. What's the result? Every plant or tree grows that is raised in these Pots.

For TRUCK GARDENERS, for Early Melons, Tomatoes and Cabbage, etc., they are the thing.

Write for sample and price. We also Manufacture Perforated Tree Protectors. Over three million of them sold last season. Write for sample and price on Pots or Protectors.

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935 E. Central Ave. Redlands, Cal.

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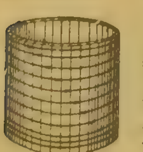
Buy Foothill Grown Trees

For good roots, thrift, and hardiness they can't be beat. Quality considered they challenge all competition. We are prepared to furnish the best of everything. Olive, Almond, Peach, Pear, Plum, Prune, Apricot, Cherry, Apple, Walnut, Grape, Quince, etc.

Orders are being booked daily, and we urge you to not delay.

WRITE US

Silva-Bergtholdt Nursery Co.
Box 751, Newcastle, Cal.



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I sell to the consumer Box shook and Boxes, Trays, Lumber, Millwork, Doors, Windows, Moulding, Wagon tanks, Spraying tanks Independent.

R. F. WILSON, Stockton, California.
Mention the Cultivator.

When writing advertisers, mention Cultivator

Citrus and Tropical Fruits

CITRUS GROWING IN AUSTRALIA

By R. Wilkinson in Fruit World of Australia.

There can be no question as to the suitability of Australia for the production of citrus fruits. Who has not seen old orange, mandarin, and lemon trees growing under the most severe conditions, without cultivation, pruning or any manure, and yet bearing heavy crops of luscious golden fruit. It is a striking example of the adaptability of our soil and climate conditions when we find trees of the citrus family thriving from one end of the commonwealth to the other. In the semitropical districts of Queensland extending from Cooktown in the north to Nerang and Redland Bay in the south, and in a strip at least a hundred miles wide, oranges are grown commercially. The wild varieties of citrus found growing in the virgin scrubs are a further example of their adaptability there. In New South Wales the principal center of production is around Sydney, extending to Penrith in the west, but oranges are grown in a lesser degree all up the north coast. Even out in the arid western country at Pera Bore near Bourke, and at Wentworth on the River Darling, citrus fruits of perhaps the finest quality produced in the commonwealth are grown under irrigation. The opening up of the great irrigation scheme on the Murrumbidgee will no doubt see a large area of it planted to oranges, as the results obtained at the Yanco experiment farm indicate that the orange will be very profitable there. Victoria produces most of her oranges by irrigation at Mildura and Merbein, on the northern border, and the industry in the South Australian irrigation settlement of Renmark has been established for about a quarter of a century. Western Australia has not as yet resorted to irrigation methods to any great extent, yet citrus growing has been carried out very successfully at Harvey, the Darling ranges, and elsewhere under irrigation and ordinary rainfall conditions. Only recently reports have been published that very fine oranges have been produced in the very heart of Australia—the Macdonnell ranges—and so we have sufficient evidence that the orange and its allied fruits are absolutely at home under our climatic conditions.

It is doubtful whether any other country in the world can produce citrus fruit to such perfection, with less trouble and for a better market than a considerable portion of Australia. Among our competitors take California and Florida as an example, which countries to a certain extent, have similar climatic conditions to ours. Our soil is as good as theirs and very much cheaper, our trees come into bearing earlier and bear heavier crops, we are not subject to "freeze outs" as they are, and, greatest advantage of all, we have an enormously large market by virtue of our geographical position. We are able to place our fruit on the European markets when they are bare of fruit from all the other citrus producing countries, and also at a time of the year, the summer, when such luscious and health-giving fruit is in great demand. It is true that Florida, and to a less degree California, have proximity to the world's markets in their favor, but in the case of the latter, the freight to England and the continent is as much as from Sydney, owing to the long overland journey. Again, compared to the orange growing countries of the Mediterranean, we have the same advantage of being able to place our fruit in their off season, we can produce better fruit, have less pests, and require less artificial manure. They have cheaper but less skilled labor in their markets, but our advantages more than outweigh theirs. These few instances serve to show how favorably our conditions compare with those obtaining in the citrus producing countries north of the equator, and also show what a vast market we can command besides our own local one, which cannot be overtaken for some considerable time yet.

The planting of large areas of citrus fruits of the right class and under such conditions that only the best is produced, cannot but increase the demand for the fruit. The local markets may be overtaken, but we should not depend on that as our only outlet. It is certain that not until the export trade is properly established can we be sure of a continuous and profitable demand for our product. The apple growing industry was never in a satisfactory state till the export trade was commenced, and it will be the same with oranges. Small and irregular shipments do not encourage a steady demand, and the sooner we can send home regular shipments of high-class fruit, the sooner will the industry begin to pay us properly.

DESCRIPTION OF COCCUS CITRICOLA

We note in the Entomological News a description by Mr. Roy E. Campbell, Berkeley, of the new soft gray scale. It is a technical description and comparison of this particular pest with Coccus hesperidum and Coccus elongatus. In fact, this scale was confused for a long time with elongatus. The description is too long and technical to have interest for Cultivator readers but we may mention a bit of the history referred to by Mr. Campbell in which he says that this pest was first discovered in 1909 by student inspectors from Pomona college. It appeared to be somewhat different from the common Coccus hesperidum and was first identified as Coccus longulus, and later changed to Coccus elongatus, Sign.

As to the habitat and distribution, Mr. Campbell says:

"Habitat, as far as known, on the leaves and twigs of citrus trees only. The young scales settle mostly on the leaves and when about half-grown migrate to the small twigs. No scales have been found on twigs larger than one-half inch in diameter. When the insects are abundant, and such is usually the case, they are arranged on the twigs in a curiously imbricated manner which is quite characteristic. The infestations are largely confined to the lower half of the tree.

"Distributed in Pomona, Claremont, Ontario, Cucamonga, Colton, Highlands, Redlands and Riverside in Southern California; in Tulare and

—control Red Black Purple and other SCALE by spraying with ZENO

Proven by Experts to be the Most Efficient and Cheapest Method

ZENO *is more efficient than fumigation* because it controls ALL the insects controlled by fumigation at one-third the cost and is effective against four times at many citrus pests, such as Scale, Red Spider, Silver Mites, Black Fungus or Smut, Lichens and other fungus on the bark. It leaves the tree in a thoroughly renovated, clean, healthy condition.

ZENO *is not an experiment* but has been used for controling pests on Citrus and Olive trees for the past five years. It is being used by the largest and most progressive growers in Southern California.

ZENO *is a perfect chemical compound* containing no free materials. Is not caustic and is safe and easy to use. Requires no agitation, mixing instantly with water, and remains in a perfect emulsion without separating in any way.

For Sale by
Producers' Supply Co., Los Angeles; Rialto Protective Association, Rialto; Kessler Brothers, El Cajon; Harry Highfield, La Mesa.

Or by the Manufacturers,
Standard Chemical Company
231 Franklin St., Oakland, Cal.

For information and demonstration in Southern California, address T. O. McClure, Hotel Hayward, Los Angeles.

Spraying Time

and there is no better spray than

Scalefoe

Not only for scale but nearly all insects, worms and bugs that infest plant life. It has been killing them for 15 years, giving the greatest satisfaction without injury, but positive benefit, to the plant. Write for circular with testimonials or better, try it.

Gallon can, 50c;
5-gal. can, freight prepaid, $2.00.

Must be mixed 20 parts water to one Scalefoe before using, making it very cheap. Write for prices in barrels delivered at your freight station.

SEEDS

At LOW PRICE and NO PRICE can Buy Better. Free Catalog.

West Coast Seed House

TOMPKINS & CO., Proprietors.
116-118 E. 7th St. LOS ANGELES

IRIS Illustrated catalog containing valuable information, and beautiful color plate, 15 cents. List with prices on over 200 varieties free upon request.
THE DEAN IRIS GARDENS, Moneta, Cal.

Fresno Counties in the lower San Joaquin Valley and slight infestations in Sacramento, Yuba City and Marysville in the Sacramento Valley. It is very probable that the insect has existed in California for some time and has passed unnoticed or, what is more likely, has been confused with and identified as Coccus hesperidum Linn, which it closely resembles."

PLOWING UNDER

When it comes to plowing under green manure crops nothing quite equals a good sharp steel mold board plow. The writer once had occasion to put under rye that was very heavy and standing higher than the horses' backs. A 14-inch steel plow was used. A chain looped around the plow beam just above the mold board and caught just at the end of the doubletree behind the off horse forced practically all the material under, but where the rye was heaviest and most woody it would force the chain back and would prevent the covering of much of the heavy growth. To overcome this a piece of baling wire—always at hand in California—was attached to the chain just over the middle of the furrow. Its full length was then allowed to drag back underneath, the dirt falling into the furrow and the friction of the soil falling upon it pulled it taut and forced under the heaviest rye until the plowed ground looked as clear of any spears of grass as any land ever did. Many prefer disking and cutting the green manure into the surface soil, but nothing suits the writer so well as plowing under and plowing under deep.—M.

PROFITS FROM FUMIGATION

The Spaniard seems to be waking up to the necessity for up-to-date methods of fruit culture and in order to make his comparatively profitless olive grove produce a revenue has availed himself of the practice of fumigation. We have just seen a table showing the earnings of olive tree plantations in Toledo, Spain, which have been treated by fumigation. The table shows the production in 1911, 1912 and 1913. The 1911 and 1912 crops were produced without any fumigation or spraying of the trees. The 1913 crop was produced after the trees were fumigated. One grower who produced from 1157 trees 2000 kilos in 1911 and 1450 kilos in 1912 produced, after fumigation, 31,500 kilos. This orchard showed increased production by fumigation of 6286 pesetas, one little orchard of 200 trees showed an increase of 707 pesetas. Probably these trees were infested to a far greater extent than are trees in California. However, it is added evidence of the worth of clean trees.

BEWARE OF SHAVINGS AND SAWDUST

In our issue of August 13th, in which so much attention was given to humus-forming material, we gave warning as to the effect of using shavings and sawdust, especially those of redwood. In addition, we have the following from Mr. C. J. K. Jones, formerly an orange grower of Florida, for many years a grower in California and a scientific observer of citrus conditions:

"I beg to protest against your advice to use shavings and sawdust as a source of humus. These are apt to be infected with fungous diseases which can be transmitted to the roots of citrus as well as to roots of deciduous and other trees. I would not use shavings or sawdust on my groves if paid to do so."

Perhaps Mr. Jones did not notice that on page 148 we gave emphatic warning regarding the use of such materials. But we are glad to have the additional information.

POLLENIZING FEIJOA

Referring to pollenizing of the feijoa, regarding which a question was recently asked in the columns of the Cultivator, we have the following from

C. F. Franceschi

In a recent issue of the California Cultivator in your Question and Answer column I came across a question about the pollenization of feijoas. I have found through various experiences that the feijoa if grown in very fertile soil with lots of water and plenty of care vegetates extremely well but never sets fruits, while others under the hardest of conditions bear fruits. The remedy for the first mentioned condition is to prune back the plant rather severely in the winter and when it starts in to bloom to keep water away from it for a couple of months, then when fruits are well set to water it rather sparingly once a month till maturity of fruits.

MOST ANY TIME

A country road, trees, sky, summer homes, a lake in the distance. A steam-railway line crosses the road at right angles.

Enter, up the road, an automobile, well loaded and running at high speed.

Enter at the far right an express train.

Both automobile and train are rushing toward the crossing.

Owner of automobile to chauffeur: "Can you make it?"

The chauffeur, speeding up: "Sure I can make it!"

He don't.—Cleveland Plain Dealer.

No War Prices

On Goodyear Tires. All advances—due to doubled cost of rubber—were withdrawn on August 19th. This applies to dealers and consumers.

We have secured from abroad sufficient rubber at former prices to warrant this announcement. Goodyear prices are now everywhere the same as they were before the war.

Sturdier Tires

In These Four Ways Excelling All the Rest

The tires which rule in Tiredom now are Goodyear tires—by long odds.

After men have used four millions of them, they lead in prestige and in sales.

The only reason is that motorists—hundreds of thousands of them—have proved these the sturdiest tires. They use them and tell other men to use them.

Where They Excel

Back of that super-service lie four exclusive features. They are these:

Our No-Rim-Cut feature. Time has proved it the only satisfactory way to completely wipe out rim-cutting.

Our "On-Air" cure. This exclusive process costs us $1,500 daily, but it ends the chief cause of blow-outs.

Our rubber rivets. By a patent method, hundreds of these are formed in each tire to combat tread separation. They reduce this risk sixty per cent.

All-Weather treads—the matchless anti-skids. They are tough, double-thick and enduring. Resistless on wet roads with their deep, sharp grips; yet flat and smooth, so they run like a plain tread.

Upper Class Tires
How to Get Them

These things make Goodyears the upper class tires. No other maker employs them. And no other method combats one of these troubles in an equally efficient way.

These things mean safety, sturdiness and strength. They mean maximum mileage and minimum trouble.

When one tire gives them—and others don't—you should get the tire that does.

Any dealer will supply you if you say you want this tire. He will sell it to you at a price impossible were it not for our mammoth output.

It is up to you. Note again these extra features. Then ask some Goodyear user what it means to have such tires.

Find out why Goodyear leads.

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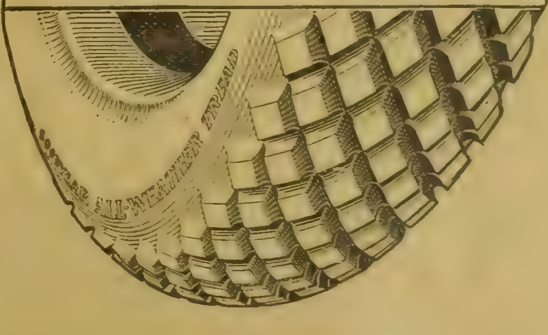
AKRON, OHIO
No-Rim-Cut Tires
With All-Weather Treads or Smooth



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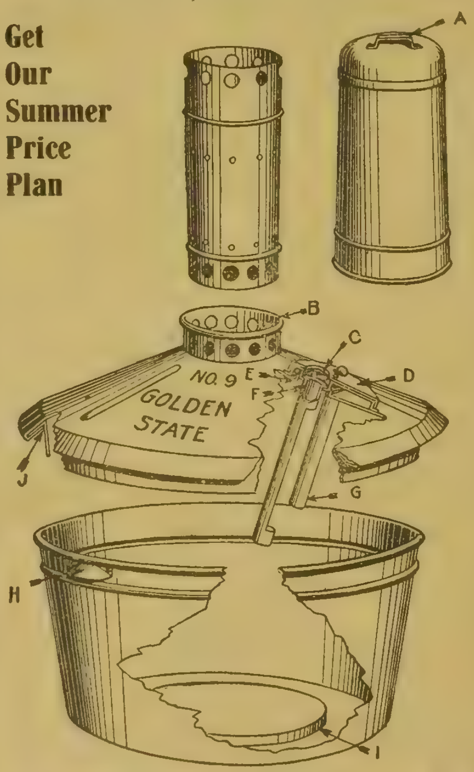
Price of Steel Soaring, Indicating Higher Charges for Heaters. Order Now, Before the Advance Goes Into Effect.

Get Our Summer Price Plan



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"NATURE GROWN TREES"

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Deciduous Fruit Culture

ALMONDS IN CALIFORNIA

Almonds are grown from the extreme northern to nearly the extreme southern end of the state and yet they are so exacting that there are very few localities in which they do best. It is impossible to give very accurate figures as to production of the various counties. We have, however, from Chief Deputy George P. Weldon, of the state horticultural commission, a few figures, which appear to be the most accurate of any yet issued. Rough estimates secured from various counties made it appear at first that there might be as high a production as 8000 tons but careful check of these figures reduces them to practically 3000 tons as the maximum.

On this point Mr. Weldon writes:

"In the J. K. Armsby report, issued, I believe, last January, the average production for the state of California for the past 16 years was 1968 tons, while the highest for any season was 3270. The figures for the various counties being so much lower than those that were given me by the county commissioners in most cases it did not seem desirable to publish them at the time."

Mr. Weldon's estimate in tons for a normal crop in the various counties is as follows:

Butte, 350; Colusa, 100; Contra Costa, 375; Lake, 25; Los Angeles, 75; Merced, 60; Riverside, 100; Sacramento, 375; San Joaquin, 500; Solano, 100; Sutter, 325; Stanislaus, 100; Tehama, 50; Yolo, 425; Yuba, 50, and total for state, 3010.

PHYLLOXERA.

By G. H. Adcock, Viticultural Station, Rutherglen, Victoria, Australia.

Viticulture, one of the most ancient, and, under reasonable cultural conditions, one of the most profitable branches of agriculture, is admirably adapted to a very extensive portion of our own and the sister states. Besides its remunerative character another important recommendation for this pursuit is that there are certain considerable areas of land, which though not well fitted for other branches of agriculture, yet lend themselves readily to profitable viticulture.

By the introduction of phylloxera into Victoria nearly 40 years ago this important industry received a temporary set-back from which it is now steadily recovering, thanks to reconstitution with American resistant vines.

In response to repeated requests for an account of this terrible scourge, the present article is submitted to readers of the Journal. Portions of it were read by invitation before the Australian Association for the Advancement of Science and other parts have appeared in departmental papers during a long period of personal investigations on this subject.

As is probably well known the insect is indigenous to North America, and was first scientifically described in 1854 by a talented entomologist (Mr. Asa Fitch), who had been deputed by the state authorities of New York to study insects in their relation to agriculture. During the course of his interesting investigations he noticed galls on the leaves of native vines. Examination disclosed the tiny but formidable insect (phylloxera vastatrix) whose ravages are now only too well known in all the viticultural countries of the world. It is allied to the well-known aphids or "plant-lice," none of which are indigenous to Australia. The losses caused by these little creatures are beyond computation.

In 1863 the pest had invaded the vineries of England where it wrought great havoc. About this time disquieting rumors of a very serious and deeply mysterious disease among vines in certain localities in France caused great uneasiness and anxiety among vignerons. In 1864 according to Laffiere phylloxera was definitely recognized there. Rooted vines had been imported from the United States, and the insects, or their eggs, had been unconsciously introduced with these importations during the years 1858 to 1862. The importers of these plants were naturally unaware of the presence of the mischievous insect and equally ignorant of the awful devastation it would cause in the vineyards. Those were the days when rural producers had not realized the risks of importing plants and seeds without the skilled supervision now found essential and provided for by legislation in almost every country.

Two infected spots were noticed at first in France, one near Garde, the other near Bordeaux. Like circles on the water these centres of infection gradually widened, taking year by year increased areas, till about 1880 the formidable invader had spread over the greater part of the south of France and commenced its irresistible advance toward the north. Four years later it was computed that two and a half million acres of vines had been destroyed. So rapid and thorough was the destruction that vine stumps became the chief supply of fuel in what had been formerly flourishing vine-growing districts. All methods were tried to exterminate the insect, but all were equally unavailing. In about a dozen years from its introduction phylloxera had spread over the chief wine-producing countries of Europe. Today there is hardly a viticultural country on the surface of the globe that has escaped infection.

In 1875 it was unintentionally introduced into Victoria. In that year a well-known nurseryman imported a number of the newest and choicest varieties of vines from an English firm. The superintendent who had charge of this firm's vinery at that time visited our state a few years later on a holiday. In relating his vine-growing experiences to an intimate friend of the writer the visitor unconsciously gave the solution of the mystery of the introduction of phylloxera. He stated that a few years previously the vines under his care "went off" in an inexplicable manner. Older vines became sickly. Young vines died in the pots. Propagation became difficult and finally impossible. Inquiries were carefully and diligently made. Searching investigation followed and eventually the dreaded phylloxera was discovered to have been the cause of the disaster. Just before these alarming symptoms showed themselves, and from this very vinery—then regarded as absolutely free from all traces of disease—novelties were imported, as already indicated, by a Victorian nurseryman. These plants were increased as rapidly as nature and the nurseryman's skill combined could multiply them. Plants and scions were distributed among a limited number of applicants. In every case where these were secured and planted the insect was subsequently found at the earliest official inspection. There is no reasonable doubt but that in this way the now almost ubiquitous insect was originally distributed in this state.

Among those who first secured some of these supposed viticultural desiderata was Mr. H. King, of the Fairview Nursery, Fyansford, near Geelong. On the 7th of November, 1877, this gentleman's attention was attracted to a couple of his vines that were not thriving like the rest. A careful examination of the roots revealed the cause in the dreaded phylloxera, then seen living for the first time in Victoria. A thorough inspection failed to discover the pest at that time to any extent in the vineyard. So rapidly, however, did it spread that, when the vines were uprooted some six months later it could be found all over. It is the invariable record of the advent of this pest to every new district. This first-infected vineyard was in every respect a model. The vines were in full vigorous growth. Neither attention nor skilled treatment was wanting. The produce had just secured for the proprietor the national prize for 100 bunches of wine grapes, 50 white and 50 black. The same vines, too, had at the previous vintage yielded 1100 gallons of excellent wine to the acre; thus amply refuting the statements hazarded at the time, and often repeated since, that the disease would only be found in neglected, worn-out, or uncultivated vineyards.

The following year (1878) found the infection widely spread throughout the Geelong district, as official reports and records of eradication show. Under legislative authority heroic measures were adopted in the hope of completely annihilating the pest. All vines within the qurantined area, which was very extensive, were ordered to be destroyed. Some of the writer's early recollections are of owners looking on, alternately frantic and morose with rage, while gangs of men employed by the government were busily engaged in uprooting the vineyards. Naturally some did not take the despoiling of their property quietly. More than once the workmen hurriedly sought the boundary fence, closely followed by the business end of a pitchfork or other weapon in the hands of an enraged owner of foreign nationality. Nor was the watch-dog wanting in valor on such exciting occasions. All vineyards—clean and infected alike—were destroyed. Practically every vine was uprooted in the vain hope of wiping out, at once and forever, the tiny but deadly foe of the vigneron. Those who stated, as many did at this time, that Victoria was now free from the pest, reckoned without their host.

Subsequently the insidious enemy invaded the Bendigo, Goulburn Valley, and Rutherglen districts. In the former locality, as at Geelong, the vineyards were sacrificed. The vines were uprooted and burned as a holocaust to the insatiable phylloxera, but without the desired effect.

The life history of this insect is remarkable and somewhat complicated. Owing to the great difficulties of observing so minute an insect of chiefly subterranean habits, the cycle was not so quickly discovered as would be the case with insects more readily observed. It may be here mentioned that another species lives on the oak, but this insect has not distinguished itself as the one we are discussing has done.

The eggs which tide the insects over the cold of winter are for this reason known as "winter-eggs." They are laid on the wood of the vine, particularly on the older wood. Probably they may have originally been also deposited on the younger canes, but as these are removed annually at pruning time and destroyed, the instinct to seek the more secure positions on the vine became hereditary. Cold of climates much more rigorous than our own does not impair the vitality of these eggs. They may be frozen without injury. The warmth of spring or early summer hatches them out. If the vine be of American origin the newly-hatched insects may form galls on the leaves. If on a vine known as European, then they descend to the roots where several generations—the parthenogenetic progeny of "laying mothers"—carry on their work of silent destruction. About the middle or towards the end of summer some of these subterranean forms begin to show signs of wing development. They are then known as "nymphs." This change is specially marked when they have exhausted their food supply by destroying the feeding roots of the vine. In original experiments conducted by the writer in 1904 it was proved that wing development could be hastened or retarded by cutting off, or allowing the food supply to remain. After several moults the wings become sufficiently developed. Their eyes, too, have been adjusted for life above ground. By this time the insects have arrived at the surface. Thence they fly, and are carried in the direction of the prevailing winds to set up new colonies of infection in the same or an adjoining vineyard.

Having reached a suitable spot these winged migrants lay eggs on the vine selected for the purpose. These eggs differ distinctly in size. From the larger females are produced, while the smaller give rise to the male. This is the first appearance in the cycle of the sexes. These insects have their organs of nutrition undeveloped. They pair, and the result of the union is the fertilization of the winter-egg already described. The tiny male insect immediately dies. His partner only survives him till the important function of egg- laying has been accomplished. We thus see that in the life cycle of phylloxera we have what may be termed an alternation of generations, and that the true sexual individuals are only developed in the last brood for the year. This is characteristic of the aphids. Beside those that thus migrate to other vines, a number of the root, or subterranean, form hibernate on the vine root awaiting warmer weather to begin their deadly work.

The effect of the puncture made by the insect's proboscis in the fine rootlets is to cause it to swell up and curve over in a peculiar manner. Frequently this injured rootlet assumes the shape of a bird's head, neck, and beak. Not only is plant food removed by these little robbers, but the puncture sets up a remarkable irritation that causes a kind of mortification of the tissues. A strange discoloration is characteristic of the larger roots attacked. To a skilled observer an abnormal crop is often the first indication of the attack of the vine. As if the plant were conscious that it cannot long survive it sets to work to make provision for the production of its seed, which is the natural way to secure the perpetuation of the species. New roots are rapidly thrown out, and the vine seems even more vigorous than ever. But it is only for a time. The unequal struggle cannot long be maintained. After vintage the leaves change color and fall early. Next season growth is stunted, and ere long the vine dies and the pest spreads farther afield.

When it was definitely decided that phylloxera had been introduced to Europe on some of the native American vines, some of the keener viticultural

(Continued on Page 215.)

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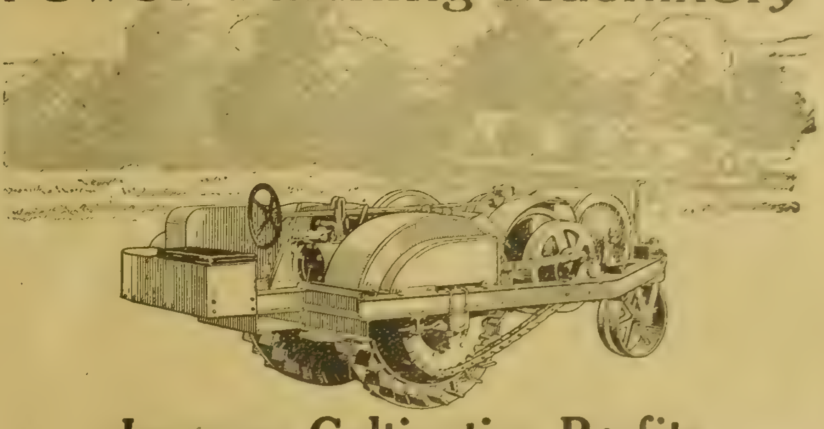

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Books

This list of helpful, instructive and interesting books is prepared by us with the purpose of enabling the Cultivator readers to supply themselves at the lowest possible cost. The great value of many of these is so well known as to need no comment from us. Some of the new books which we have added to the list this year deserve special mention. "Co-Operation in Agriculture," by G. Harold Powell, should be in the hands of every producer of farm products. "Farm Sewage," by Santee, will aid many in solving a perplexing problem. "Farm Manures," by Thorne, is decidedly valuable. We state sincerely that no orchardist can afford to get along without "The Pruning Book," by Bailey. We have had much inquiry for a book on keeping farm accounts—we can supply a good one now. The imported book, "Insecticides, Fungicides and Weedkillers," by Bourcart, is a marvel of completeness. The rapidly increasing use of gasoline engines, automobiles and tractors by the farmers has demanded reliable treatises on these subjects. "The Gasoline Engine on the Farm," by Putnam, "The Modern Gasoline Automobile," by Page, and "Traction Farming and Traction Engineering" are exceptionally complete, well illustrated and easily understood. Don't overlook the "Cement Workers' Handbook"—it's "worth its weight in gold." Every book on this list has the endorsement of the California Cultivator.

	Book Alone.	With Cultivator.	Free for the following number of new Subscribers
American Grape Growing, by Hussman	$ 1.50	$ 2.25	3
Arid Agriculture, by Buffum	1.50	2.35	3
Book of Alfalfa, by Coburn	2.00	2.75	4
California Soils, by Prof. Gilbert E. Bailey	1.50	2.20	3
Cyclopedia of Agriculture, by Bailey	20.00	20.00	40
Cement Worker's Handbook	.50	1.30	1
Citrus Fruits and Their Culture, by Hume	2.50	3.25	5
Co-operation in Agriculture, by Powell	1.50	2.40	3
Domestic Water Supplies on the Farm, Fuller	1.50	2.30	3
Date Growing, by Popenoe	2.16	2.85	4
Feeds and Feeding, by Henry	2.25	3.00	5
Farm and Garden Rule Book, by Bailey	2.17	2.90	4
Farm Sewage, by Santee	.50	1.40	1
Field Manual for Beet Sugar Growers, Adams	1.00	1.85	2
Fruit Growing in Arid Regions, by Paddock	1.50	2.40	3
Farm Manures, by Thorne	1.50	2.25	3
Farm Friends and Farm Foes	.90	1.85	2
Farmers of Forty Centuries, by King	2.15	2.95	4
Fertilizers, Source, Purchase and Use (Smith)	1.00	1.90	2
Garden Helps, by Hall	.75	1.65	2
Gasoline Engine on the Farm, by Putnam	2.00	2.60	4
Garden Book of California (Ornamental) by Angier	2.00	2.85	4
How to Keep Farm Accounts	1.00	1.75	2
Hand Book for Farmers and Dairymen, by Woll	1.50	2.30	3
Irrigation and Drainage, by King	1.50	2.40	3
Insecticides, Fungicides and Weed-killers	4.50	4.75	9
Modern Gasoline Automobile, by Page	2.50	3.10	5
Milk and Its Products, by Wing	1.50	2.40	3
Making the Farm Pay, by Bowsfield	1.15	1.95	2
Nursery Book, by Bailey	1.50	2.40	3
Practical Garden Book, by Bailey and Hunn	1.00	1.90	2
Primer of Irrigation, by Anderson (paper cover)	1.00	1.85	2
Pruning Book, by Bailey	1.50	2.40	3
Story of the Soil, by Hopkins	1.50	2.35	3
Soils, by Hilgard	4.00	4.75	8
Swine in America, by Coburn	2.50	3.25	5
Traction Farming and Traction Engineering	1.65	2.25	3
Science and Practice of Cheese Making	1.75	2.50	4
Soil Fertility and Permanent Agriculture, Hopkins	2.70	3.50	5
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Built and Used by Poultrymen (excellent)	.50	1.25	1
Belgian Hare Guide	.25	1.20	1
Ducks and Geese	.75	1.65	2
Leghorns, All Varieties	1.00	1.85	2
Minorcas—Every Comb and Color	.50	1.45	1
Practical Rabbit Keeping	1.25	2.10	2
Perfected Poultry of America	2.50	3.00	5
Poultry Houses and Fixtures	.50	1.40	1
Pigeons—All About Them	1.00	1.90	2
Reliable Poultry Remedies	.25	1.20	1
Rhode Island Reds	.75	1.65	2
Turkeys	.75	1.65	2
Western Poultry Book, by Mrs. Basley	1.00	1.75	2
BEES			
A B C and X Y Z of Bee Culture	$ 1.50	$ 2.35	3
Beekeeper's Guide, by Prof. Cook	1.20	2.00	3

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115 No. Broadway, Los Angeles, Cal.

The Ornamental Garden

PRUNING ROSES

Written for the California Cultivator

By Ernest Braunton.

Someone wisely remarked that the training of a child should begin with its grandparents. In pruning roses, we need not go back, relatively, so far, for we may safely begin with the generation in hand.

We should, however, begin some weeks before autumn pruning time by giving the bushes a rest. In my own garden, where the bushes have been established for at least five years, I have not watered one bed, containing 60 bushes, since July 1st. Had they been established but one year I should begin this period of denial about August 15th. Had they been planted two years, the first day of the latter month would have seen them having their farewell drink.

About the first day of October, not before, these roses will be pruned. A few days later, by reason of a heavy reduction of the top, the buds will begin to swell, and as new leaves will burst forth in another few days, it is quite evident to all that this spurt of life will call for the stimulus and support of a copious supply of water. No fertilizer need be given just yet as the rejuvenated plant is hardly vigorous enough to need it.

Now as to pruning: I first cut away the top one-half of the bushes to get this superfluous wood out of the way. Always aim to cut the largest and most vigorous canes just about a quarter-inch above a bud on the outer side of the cane; this will spread the future growth. Next cut out all dead wood, then all wood smaller than a lead pencil. Next, all canes that cross upright growths or shoot out at abnormal angles to the straight up-growing canes. Then, if many canes are left, cut away those in the center so as to leave a vase-like frame, circular in outline and hollow within. Aim to leave nothing but good strong canes; three may be enough, five may be better, but seven is plenty, even on a large strong bush.

Now you have a frame-work or foundation on which may be built a strong, vigorous bush capable of mighty performances, one from which you have a right to expect great things. During the resting period foliage may become yellow and drop, small and soft canes which should be cut away may have their bark shrivel, but do not become alarmed. Neither the life nor vigor of your bushes are in danger. Remember, too, that, strange as it may seem, you should cut back the weak-growing sorts very heavily, but the strong-growing ones only moderately, for the latter have been doing very well as they were, while it is evident the weaker ones are in need of drastic treatment which will leave all of the present root system to support much less of top growth. When all this is done, irrigate, fertilize, and cultivate, and keep on doing so. Irrigations should be frequent and and heavy, but fertilizations and cultivations should be frequent but light, though the first cultivation may be deep and thorough and the soil then covered heavily with coarse stable manure and left for the season. Choose for yourself.

Railroad Gardening.

Every railroad station and grounds in California should be a standing advertisement, during 1915, of the community in which they are situated. Just consider the value of such impressions as induce the following remarks: "What a lovely display of plants and flowers we saw at Blank. The climate and soil there seem to grow all sorts of plants in perfection." By cooperating with the railroal agent it is probable that the station and its surroundings may be made a zone of beauty and this may be true of the most humble rural jumping-off place. What better means, or really what other means, are possible in seeking to call the attention of the "through-tourist" to your city, town or community?

Color Schemes.

So many times have I been asked about color schemes and for list of specific colors that it is advisable to publish lists of flowering plants easily grown that may be depended on to blossom at varying periods throughout the year. Everyone should know enough of trees to select those, for many like the acacias are known to all. In bedding plants use: for white, candytuft, phlox, asters (annual and perennial), stocks, iris, pyrethrum, gladiolius, dahlias, geraniums, sweet alyssum, and zinnias. For pink use: phlox (annuals and perennials,) asters, stocks, gladiolus, and geraniums. For red: poppies, salvias, coxcomb, cannas, geraniums, and gladiolus. For yellows: California poppies, coreopsis, calliopsis, calendula, marigolds, sunflowers, day lilies, gladiolus, and gaillardias. In blue: iris, Canterbury bells, cornflower, larkspurs, columbines, veronica and stokesia. Some tall plants, as hollyhocks, for background, come in all colors.

High Prices for Seeds.

The present war in Europe may or may not last long enough seriously to affect the price of flower seeds, though the wholesale rate on some has already advanced. The amount of flower seeds used by the average planter is so small that war prices need give the individual but little concern. There are, however, certain grass and clover seeds that come from Germany on which a sharp advance is already reported. Of course vegetable seeds may be seriously affected. Better buy early of all seeds for even if war ceases at once, prices will be high for at least a year.

Handbook on Gardening.

The seedmen of Los Angeles ar to publish a handbook on gardenin for the use of school children, th various parts of which will be writte by experts in the trade. It will b distributed free to all schools an doubtless anyone may obtain a cop for the asking. It has not yet bee issued, though in another month or s it may be available for distributio All interested in gardening shoul secure a copy.

Summer Irrigation.

About this time of the year som trees and shrubs long established an of good size show by drooping leave and a look of general depression that they need water. It is not well to allow these to remain thirsty until rains come and I would advise keeping a sharp lookout and irrigating heavily all those showing signs of distress. From now on to winter they should be watered at least once each month.

Tree Men Meet.

Sometime in September all those vitally interested in street and highway planting and in beautifying all of our fair land will meet at the Hotel Glenwood in Riverside, the occasion being the semi-annual convention of the Arboricultural Association of Southern California. We are depending upon our veteran friend, J. H. Reed, for arrangement and provision of a program that will excel any heretofore "pulled off" in these parts. Let us all be there and help this noble work along.

The Hardy Laurustine.

The extreme hardiness and sufficiency of the Laurustine calls for admiration on the part of all Californians. A native of Europe and most popular in England, the latter an extremely damp climate, it nevertheless deports itself most wonderfully in our arid cline. During the present summer I have observed several of the shrubs where they have had no care, not even a drink of water, and they endure an unnatural lack of humidity without a signal of distress.

ORNAMENTALS AT FRESNO FAIR

Secretary Eberhart of the Fresno district fair writes regarding the coming fair, which will be held September 29-October 3, that the management is now promoting a genuine floral festival in connection with the fair. This department is in charge of W. S. Marshall and Ernest Braunton of Los Angeles has been chosen judge. Nurserymen and amateur plant lovers are being appealed to to make it a notable exhibit. Mr. Eberhart writes that he anticipates an attendance of from 10,000 to 20,000 people daily. .

General Agriculture

A BAD ALFALFA DISEASE

Complaint has been coming in to the Colorado Agricultural College from a number of localities, but especially from the Western Slope and the San Luis Valley, of injury of some kind to alfalfa fields. A trip made to the San Luis Valley fields showed that all or practically all were affected with stem blight, sometimes called black stem blight or black stem rot. This is not a new disease as damage was noted several years ago. Professor Sackett worked out the cause of the trouble and found it to be a bacterial disease that affected the stems. The disease does not seem to be virulent enough to gain entrance to the plants under ordinary conditions. Tender, rapidly growing alfalfa may be injured by frosts or hail. When the epidermis or plant skin is broken from these causes the disease usually gains entrance.

The disease when first contracted causes a sort of yellowish, watery appearance on the sides of the stems. It turns to a black color very soon. It is usually noticed that alfalfa suffering from this disease does not make the proper growth. The most efficient remedy is to mow the alfalfa immediately after hail or frost injury. If the disease is observed to be present the best remedy is to mow at once.

If allowed to go without mowing the disease is liable to creep down the stems into the crowns, finally killing the crown buds and root. Mowing at the proper time has been found to be a practical and efficient preventive.—Alvin Keyser, Colorado Experiment Station.

SUGAR

The question having come up as to the quality of beet sugar as compared with cane sugar in fruit preserving, we wrote to the state university for the latest in this matter and have the following from Professor W. T. Clarke: If given equal degrees of refinement, there is absolutely no difference between sugar produced from sugar cane and sugar produced from the beet. The mechanical composition of the two is identically the same, the crystalization form identical, and the refraction test is the same. I would emphasize this matter of refinement. If the beet sugar is impure, while the cane sugar contains no impurities, then differences would be noted in the results obtained when using the materials. The same would be true with the cane sugar impure and the beet sugar pure. Present day methods of refinement make it possible for manufacturers to produce sugar from the beet that is absolutely undistinguishable from either the purity point of view or from any other point of view from sugar produced from the cane. Tests of our own with sugars from the two sources, and of equal refinement, indicate that no difference is experienced when using them for jellies, preserves or general canning operations.

RICE EXPOSITION

For the first time in the history of the United States a rice exposition is to be given north of the Mason and Dixon line.

The significance of this announcement will be more fully appreciated when it is understood that California is fast taking rank as one of the most important rice producing states in the Union. To celebrate the third anniversary of the establishment of the industry here, the people of Butte County have planned an exposition to be given in Gridley on September 3-6.

In the course of the three years the industry has assumed remarkably large proportions in California. Three years ago there was less than 50 acres planted to rice in Butte County. Today there are 15,000 acres planted to the cereal, and the value of the crop this year is estimated at $1,000,000. Preparations are already in progress for planting many additional acres next year, and it would not be surprising if the crop output were doubled.

At the exposition to be given in Gridley, which is officially known as "Butte County Rice Exposition," rice will be shown in its every stage from the seed that is planted in the ground to the various milled products.

Irrigation problems and problems connected with the harvesting and milling of the rice will be discussed by experts. The state dairying department is also taking a great interest in the exposition. One of the most interesting features of the big fair will be a dairy herd of 12 cows that have been and will be fed upon rice powders and rice straw fodder. Hand in hand with the development of rice fields there is going to be the development of a big dairy industry, for it has been found that rice straw forms an admirable fodder for cattle.

HOW ONE FARMER KEEPS ACCOUNTS

We know a farmer in the Sacramento valley who keeps a simple set of books that give him the same information about his business that a manufacturer has about the details of his. He pays everything by check and divides the amount of his monthly expenditures among as many cost factors as he wishes to keep an account of. Some of these are: Equipment, permanent improvements, cost of trees (for planting in orchard), care of trees, irrigation plant, cost of irrigating and crops. This last is kept in one lump account and other pages follow it with cost of separate crops segregated. Income is another account. A summary of all cost accounts corresponds with the checkbook account each month.

All of this is easy because of a simple, inexpensive loose leaf record book with index sheets. When an account makes more than one page another is slipped in. The financial history of the ranch from the time of beginning the system is shown at a glance, as is any other feature or item.

For instance, a glance at the hog account shows how much money has been spent for hogs — an inventory can be made on a line at any time—and this, with an estimate of the feed consumed, gives the returns from the hogs in a moment.

If these accounts had to be kept in the old kind of books it would, of course, be possible to keep them, but these little loose-leaf record books so simplify the matter that it makes it a job that is easy for a busy man to do and there is a fascination about knowing the standing of the various accounts each month that makes it a pleasure.

Alfalfa or heavy land in the Sacramento valley that was somewhat uneven during the first year after seeding, is thickening up in many places this year and the growth is uniform all over the field. The spots where the alfalfa did not grow so well at first are "heavier," or contain more clay than the balance of the field, and the roots and rootlets of the plants do not penetrate it so readily. An alfalfa root, however, is one of the greatest "soil openers" known to agriculture, and if the plant can keep alive it will gradually "conquer" a very hard soil. In this good work that alfalfa is so willing to do if it has the opportunity, it pays to give it every possible aid, such as a mulch of manure or straw to hold the moisture or the application of lime to make the soil more mellow.

Electricity can be used for running all kinds of stationary farm machinery —for pumping water, grinding feed, cutting fodder, filling silos, sawing wood, running the cream separator, grindstone, washing machine, etc. Where electricity is available, you merely turn the switch and the machine starts. When through using it you pull the switch and the machine stops, likewise the expense for current.

It pays to do a man's work. It pays to study throughtfully one's occupation and system of farming so as to obtain the greatest enjoyment, as well as the greatest possible revenue from it. But these farmers are doing a man's work. They are not doing the work of a horse or a machine. Brute or mechanical force can never equal in results the thought and energy of the man who uses his head.

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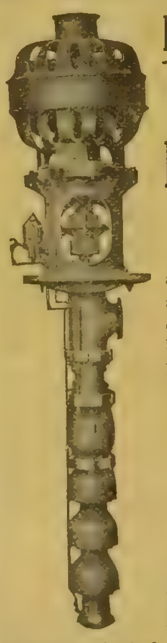

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THE EIGHT-HOUR BILL

(Continued from Page 195.)

vent loss. He cannot indefinitely increase his force on the moment, as there is no available supply from which to draw. He will not be permitted to work his crew more than forty-eight hours a week, no matter what wages he is willing to pay, for that cre whas been relegated to idleness while his crop has been legislated into loss. The ideas of the walking delegate, however, must be sustained. The weather conditions must be changed. Petitions should be circulated at once for an initiative to place before the electors of the state a proposition to regulate the working hours of the weather. They should be made to conform to the modern eight-hour schedule.

CALIFORNIA EIGHT-HOUR BILL

"An Act to amend the Penal Code by adding a new section thereto, to be numbered 393½, limiting the hours of labor of employes and providing a penalty for violations of the provisions of this Act.

"The People of the State of California do enact as follows:

"Any employer who shall require or permit, or who shall suffer or permit any overseer, superintendent, foreman or other agent of such employer, to require or permit any person in his employ to work more than eight hours in one day or more than 48 hours in one week, except in cases of extraordinary emergency caused by fire, flood or danger to life or property, shall be guilty of a misdemeanor, and upon conviction thereof shall be fined not less than $50 nor more than $500 or imprisoned in the county jail not less than 10 nor more than 90 days, or both so fined and imprisoned."

The measure under consideration is ill advised, as it abridges personal liberty, tends to remove incentive for individual development and retard material progress. It is ill-advised because of its inelastisity. No provision is suggested to meet emergencies, such as are encountered by the orchardist. It is based on theory, is impractical and against the best interests of the state. Its author ignored the interests of the California fruit grower. He ruthlessly set aside thoughts of a possible development in a promising horticultural field. Unwittingly he proposes measures against the best interests of the laboring man.

Fruit Grower Scores Socialist.

At a meeting of farmers of Orange County resolutions were endorsed unanimously urging every farmer of that county to work and vote against the eight-hour measure.

At the meeting a Mr. Williams, who is secretary of the state socialist organization, attempted to defend the measure. In a reply to his talk Mr. C. C. Chapman said:

"You have failed to answer or explain any of the important objections made here by our farmers, or to show that this law would not seriously injure all the people of California. Working conditions in California are the finest in existence in the world today, and if humanity anywhere should be satisfied, contented and happy, it is here. This law is proposed by a small minority on the false assumption that it will benefit the worker, but as a matter of fact it will injure the employe first and worst.

"Our workers in Orange County at present are satisfied, thrifty, healthful, industrious and intelligent. They are well paid, are anxious to aid in harvesting our crops and to make extra pay for overtime when conditions demand, which overtime this law forbids. They have respect for their duties, for their employers and for themselves. They will continue to be thus contented unless professional agitators go among them circulating falsehoods and fomenting discontent and hatred.

"You, Mr. Williams, should be ashamed of yourself to be in such a business. You are seeking to inflict a serious injury upon all the people of the state. You owe an apology to the people of California for foisting this outrageous proposition upon the ballot."

EIGHT-HOUR LAW

The state of Washington is also in the midst of an eight-hour campaign. Its proposed law is much less drastic than that of California; for instance, by its provisions farmers may, if necessity arises, work their help for ten hours, providing they pay one and a-half wages; other provisions also are more favorable. But as to the effect of that bill upon the agricultural industry of the state we quote from the Spokesman Review, published at Spokane:

"Officers of the farmer's union of Walla Walla, Columbia and Garfield Counties, condemning the eight-hour initiative measure, declare in their argument filed for publication with the secretary of state that it would be hard to imagine any legislation more hostile to the best interests of the farmer. The enactment of this measure," adds their protest, "means ruin to agricultural operations."

"This undoubtedly voices the convictions of an overwhelming majority of the farmers, fruit growers, live stock producers and dairymen of Washington. A blow more dangerous than initiative measure No. 13 was never aimed at the basic industries of any state.

"It seems mere platitude to say that the men and women who derive their support from the soil and feed the nation find it necessary now, as it has been in all ages, to adjust themselves and their labor to the seasons, the weather and the elements. They must plow when the soil is in condition and stop work when it is dry or frozen. They must seed with expedition, cultivate with industry and fight weeds in the growing season. They must harvest long hours when the crops ripen, and in emergencies, to save the product from damage or destruction, must even disregard the Sabbath. The work of threshing must be conducted with a constant eye on the weather instead of the clock, and the grain must be hauled over earth roads to the railroads when conditions are favorable.

"These necessities apply with still greater force to haying and orchard work, as every one must know who has knowledge of farm life and agricultural conditions. Yet notwithstanding these obvious and unrepealable facts in nature it is seriously proposed to deal with seasonal industries as though they could be carried on continuously and without elemental interference six days a week and 52 weeks in the year.

"This measure, if adopted, would

cinch, in the first instance, the farmer, and in the next instance the general population of Washington. If adopted and enforced it would diminish the state's productive capacity and leave it with less to market of grain, of live stock, of hay, of orchard products, of lumber and other forest commodities, of fish, of hops and every other product of the soil and waters. The yield would be cut down and a part of the diminished product would be destroyed by the elements.

"As a consequence business would be depressed, land values would depreciate, immigration and capital would be turned from the state's borders and the lot of the farmer made vastly more difficult.

"Labor, instead of benefiting from this proposed measure, would suffer most of all. Its opportunity to find employment would be impaired, not only in the industries directly affected, but all down the industrial and business line.

"These facts are so self-evident and undeniable that it is no wonder the farmers are lodging an emphatic protest."

Farm Economics

COUNTY AGRICULTURAL AGENTS

County agricultural agents are sometimes referred to as "county advisers." This implies a misunderstanding of the real work of the agent. Advisory work is a part of the agent's duties, but is a minor part. Farmers quite generally resent and refuse to support the county agent whose work is outlined to them primarily as that of an adviser. As we conceive of it, the county agricultural agent has about half a dozen principal functions.

(1) He studies the agriculture of the county to learn what is being done and what is worth while agriculturally in each part of it. This study includes farm, financial, and organization surveys.

(2) He gives the results of his studies to farmers, not in the way of advice, but as facts observed and conclusions drawn. This is done through the local press, lectures, institutes, circulars, short courses, and personal interviews.

(3) Based on these local studies and the ascertained needs of the county, clubs, associations, and the like are organized and the individuals solicited to undertake definite lines of agricultural improvement on their own farms. Organizations are formed for cooperative buying and marketing and the standardization of farm products.

(4) He coordinates all existing agricultural agencies within the county so that all may work unitedly and efficiently.

(5) He develops local leadership. The task of improving the agriculture of an entire county is so stupendous that the agent must be primarily an administrator. He must inspire and accept the help of voluntary assistants in work.

(6) He acts as the connecting line between the scientists of the research institutions of the state and nation and the farmer, presenting the results of investigations in such a way that the farmer can use them and calling attention of scientists to the local agricultural problems of the county and soliciting their assistance.

(7) He gives advice. This may relate to spraying, seed treatment, mixing fertilizers, combating insect pests, cultural practices, or other miscellaneous matters which are the stock in trade of every well informed agent. We place the giving of advice seventh on the list because in actually improving the agriculture of the county it is probably of least importance, though in point of time it may be the first work undertaken.—Farm Management Monthly.

BUILDING RURAL LIFE AND CITIZENSHIP

One of the interesting features of the program of the ninth international Dry Farming Congress at Wichita, Kansas, October 7-17, will be an address by a representative of the American Bankers' Association, Mr. Joseph Hirsch of Corpus Christi, Texas, who will speak on the subject, "Practical Cooperation Between Bankers and Farmers."

Mr. Hirsch has been designated by B. F. Harris of Champaign, Illinois, chairman of the agricultural commission of the American Bankers' Association, who is himself unable to attend.

Mr. Harris, in the Banker-Farmer, which he publishes, has written the following editorial on the subject of rural education and citizenship:

"Take care of the youth of the republic, and they will take care of the republic!

"It is a maxim of German statesmen that whatever you would have appear in the life of a people, you should put into the schools.

"Educate a boy and you train a man; educate a girl and you train a family.

"Spencer said, 'To prepare us for complete living is the function which education has to discharge.' Has this function been discharged—is it being discharged now?

"If the Banker-Farmer believed that it is being discharged in any large or adequate measure — and particularly in the elementary grades and in the country, it would not use its cover page for Dr. Eliot's strong statement, and devote much of its space to this paramount issue, placing better elementary schools as the foundation stone of the Banker-Farmer program.

The great constructive work we all urge is based on and can only come from education fitted to the needs of citizenship—it will solve the other problems.

"We must devote more attention to the largest number of children—irrespective of their location—who are in school for the shortest period. Only a fading fraction of all the children go to, or partly through the high schools, and a larger measure of aid and attention must be given to the lower grades.

"More facilities for the elementary education of the many who are limited thereto—yet not withholding any portion for the higher education of the few who furnish trained leadership, stimulus and idealism.

"As a fact, the poorest schools—many of which could be consolidated—and the poorest teachers—largely because underpaid—are in the country and villages.

"The country life commission reported these schools 'Largely responsible for ineffective farming, lack of ideals and the drift to town.'

"From principles of citizenship and equality, as well as because we want to build up rural life, we must not penalize the country boys and girls with a school a self-respecting town would not tolerate, but place them on the same footing in the grades with those in town and bring the schools to the highest point of efficiency.

"The foundation of our future citizenship is laid in the rural and elementary schools, where 85 per cent of the children get all their education, and not in the higher schools of learning. The higher the standard in these elementary schools the higher will be the type of our citizenship.

"Our youth are not educated until hands, head and heart are trained efficiently for their own maintenance and for the benefit of their fellows and the state.

"To learn more is to earn more and only the useful person is safe and sane. In education and scientific farming lies the hope of the nation—and we want more bankers, business men and thoughtful, earnest farmers to go on our school boards.

"What are you going to do to improve the situation?"

SAVES SCHOOLS $2,000,000

Two million dollars have been saved the state schools through a decision handed down yesterday in San Francisco by the court of appeals sustaining the contention of Surveyor-General W. S. Kingsbury in the lieu land suit brought by Fred W. Lake, affecting 500 claimants and 270,000 acres of California lands. These will be sold at public auction and the proceeds will go to the schools of California. The last lands auctioned brought $10.30 per acre, less the $1.25 due the government.

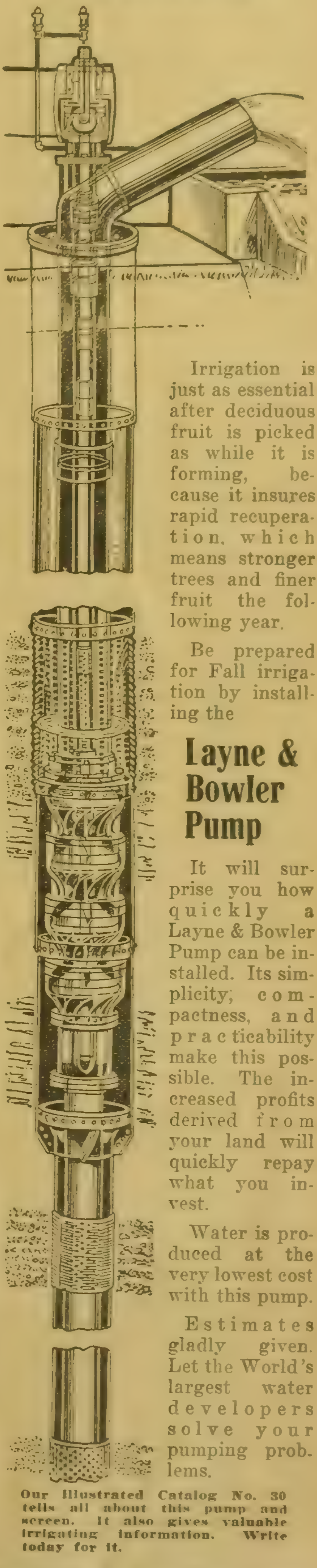
This case has been in the courts of the state since 1909, when Attorney-General U. S. Webb and Kingsbury secured the passage of the Thompson lieu land law which made it possible to throw such lands back on the market that they might revert to the benefit of the schools. — Sacramento Union.

(The Cultivator will add that it has no knowledge of the location of these lands or when they will be offered for sale. Doubtless announcement will be made by the surveyor-general at the proper time and place.)

FARM ADVISERS

There are now seven counties which have farm advisers and Mr. Crocheron, leader of this work in the state, sends the list as follows: San Joaquin County, Frank Lyons; Humboldt County, A. H. Christiansen; San Diego County, Jas. A. Armstrong; Yolo County, N. P. Searles; Napa County, H. J. Baade; Madera County, Thos. C. Mayhew; Ventura County, Wm. B. Parker; Alameda County, Walter Nixon; Kern County, Roland R. Mack.

The bureau of agriculture of the Philippines is to make a more serious attempt to restore the coffee industry of the islands. An experiment station has been maintained at Lipa in Batangas province for 10 years. This station has been trying to find a means of withstanding the ravages of pests which have destroyed practically all the coffee plants in the island.



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NEUTRALITY

Appealing to the press of California to maintain a strictly neutral position regarding the war in Europe, the California Development Board sends information as to the people who make up our population. From the facts presented we gather that there are in this country 76,208 Germans, 17,330 Austrians, 3126 Hungarians, 161,671 British, 63,549 Italians, 20,470 French, 16,850 Russians and 1441 Belgians.

CALIFORNIA STATE FAIR

In referring to the California state fair we recently stated that E. J. Delorey was secretary of the association. This was an error, as we are informed by Mr. George Robertson of the state board of agriculture. He writes: "Mr. Delorey has been elected, or appointed, I should say, a director in place of Mr. Chas W. Paine, who has been appointed secretary in place of J. L. McCarthy, deceased."

IRRIGATION CONGRESS

The twenty-first international irrigation congress will convene in Calgary, October 5, and remain in session until and including October 9. A full list of committees has been appointed to make local arrangements, and in addition to the congress and discussions of the usual matters pertaining to irrigation there will be an exhibit of irrigated farm products. The secretary is Mr. Andrew Miller, Industrial Commission, Calgary, Alberta, Canada.

ADVERTISE OUR FRUITS

Florida orange producers are going to follow in the steps of California and do some extensive advertising of Florida oranges and grapefruit. She has seen the beneficial results of such an advertising campaign and wants her producers to receive liberal returns. We wish that other lines of California fruits would be advertised as is the citrus. Some have maintained that advertising adds to marketing expense; we would sooner say that it reduces advertising expense because of aiding through education in a marketing campaign, to say nothing of extending the markets, and, occasionally at least, bettering prices.

AMERICAN POMOLOGICAL

We are glad to know that the next meeting of the American Pomological Society will be held in Berkeley on September 2 and 3, 1915. We believe this is the first time the American Pomological has met on the Pacific coast, and we hope that California will be able to show the members of the society many fruit growing features which will be new to them. The itinerary is not yet arranged. The executive committee has in mind three different routes to the coast: One by the way of St. Louis, Los Angeles and Fresno; another by way of the canal, stopping at San Diego, thence by rail to San Francisco; another by way of the Northern or Union Pacific through Montana, Washington and Oregon. It is now thought that the Society for Horticultural Science, also the Pacific Coast Nurserymen's Association will meet at the same time.

MARKETING BY PARCEL POST

The parcel post may yet prove to be of as great benefit to the farmer as a marketing agency as it is as a carrier of merchandise. Experimental work is being done in ten centers where postmasters have been instructed to receive names of producers who are willing to sell produce direct to consumers. If this works out satisfactorily it may be the means of making Uncle Sam the biggest middleman in the world. Presumably this will call for emphatic protest on the part of the marketing trade, and perhaps justly, for we do not see how our trade can be conducted without some of the machinery which we now have. But certainly some step is necessary in order to secure more just treatment for the producers, and perhaps the parcel post will furnish the requisite club. The cities in which the experiment is being tried are: Boston, Atlanta, St. Louis, San Francisco, Baltimore, Detroit, Washington, Lacrosse, Lynn and Rock Island.

MORE POWER

Asked as to the effect of the proposed eight-hour law on the larger ranchers, the manager of one of the largest lemon producing properties in California has said: "The result will be that we will order more tractors and more electric motors and endeavor in every way to lessen the labor requirements. This will necessitate selling many animals and, of course, reducing the labor employed." The idea has been expressed by some of the smaller farmers that this bill, if it should become a law, will aid the small farmer who does the larger part of his work and give him a chance to keep up with the larger producer, but we believe that exactly the reverse will be the case. The larger producer with more capital at his command can adapt himself to the new conditions much more readily than the small farmer who will be unable to employ power to any great extent. He is the one who must employ extra labor at harvest time, and if he is prevented from meeting the conditions each season, he will suffer losses which will prove of most serious consequence.

THE EXPOSITION AND WAR

What effect the war will have on the exposition is the subject of serious discussion on the coast and, in fact, over the entire country. Plans have been made for the biggest ever, and it is most regrettable from a selfish standpoint, that the war should have broken out at this particular time. However, after discussing it from all sides, we believe the general feeling is that the effect will not be so serious as at first anticipated. On this point we have a letter from D. O. Lively, chief of the department of live stock, in which he says:

"The European war will make no change in the plans of the Panama-Pacific International Exposition. Of the 37 foreign nations that are taking part in the exposition, not to exceed five will be affected by the conflict of arms. It is not certain that this will apply to more than three. The exhibition palaces of the exposition are completed and exhibits are being installed. The states of the American Union are erecting their buildings. The gardens are planted and will be ready to bloom throughout the months of the exposition. The department of live stock will house as many exhibits as if there were no complications in Europe. Trade relations will be established with the countries of Central America, South America and with Japan and China. The total cash appropriations for prizes and transportation, amounting to $400,000, will be available. The exposition will be given within the dates originally fixed, February 20 to December 4, 1915."

Agricultural News Notes

Wilmington, Delaware, is the next meeting place of the National Grange Patrons of Husbandry, November 11-14.

Cooperative associations of agriculture are being formed in the Philippines by the government departments of agriculture and public instruction.

President Wilson has directed Attorney General McReynolds and Secretary Redfield of the department of commerce to investigate recent advances in prices of foodstuffs.

Demonstrations of use of hog cholera serum will be given at stock and county and state fairs in Wisconsin by the United States department of agriculture and the Wisconsin college of agriculture.

A Cairo correspondent writes that, owing to the falling of the Nile, Egypt will have to import nearly all her rice this year. The Nile has not been so low for nearly 100 years, and the facilities for water storage have been insufficient to relieve the distress.

Pre-cooling investigations have been carried on by the U. S. department of agriculture on apples, pears, peaches and small fruits in the eastern states; pomelos in Florida; oranges, lemons, apples, grapes and fresh figs in California, and apples and pears in Oregon and Washington.

Holland has sevefal large associations for promoting bulb culture. Consul Murphy of Amsterdam states that the General Bulb Culture Association has 3000 members divided into 37 branches; the Dutch Bulb Growers' Association, 1400 members, in 31 branches; and the Federation of Bulb Merchants, 200 members.

On July 1, 26 Siberian peasant farmers landed at Hull, England, to study British agricultural methods and cooperative systems, as delegates from what has been called the greatest cooperative farming society in the world. This society has built up an extensive butter trade with Great Britain. Between 30,000 and 40,000 long tons of Siberian butter are consumed in the United Kingdom annually, and Siberian eggs and cheese are likewise purchased in large quantities.

There are 36 fruit packing schools in British Columbia, which are rendering valuable service in the way of teaching the fruit growers of the province the most efficient and economical methods of packing. Many settlers in British Columbia had no knowledge of farming or fruit growing when they settled on the land, and the government realizes the necessity of primary instruction in the various branches of agriculture in order to assist them in making a success of their undertakings.

Some years ago a herd of Galloway cattle was taken to Alaska by the government. Two years ago the volcanic eruption of Mount Katmi covered the country for miles with lava and ruined the pasturage and other forage. It was necessary to bring these cattle back to the states, and they have been pastured in western Washington, south of Chehalis. Professor C. C. Georgeson, head of the four Alaska experiment stations, reports that by hard work and intensive seeding they have managed to grow a pretty good crop of hardy grass on the volcanic ash and now about 50 head of the Galloway cattle are on their way back to the northland.

Agricultural News Notes of the Pacific Coast

Northern California

Several Yolo County horses will trot at the state fair this fall.

Napa County farmers are fully organized in fighting the eight-hour law.

A large acreage of standing grain was burned over near Woodland, Yolo County.

Eldorado County has shipped over 100 cars of choice mountain pears to eastern markets.

Solano County supervisors have appropriated $2000 for expense of a farm adviser's office.

One orange grower at Fernley, Nevada County, claims ripe oranges for the middle of August.

The first meeting of directors of the Anderson-Cottonwood irrigation district was held last week.

Federal engineers are inspecting the Yuba and Feather rivers to devise methods of flood control.

The labor situation at Wheatland is still more or less strained. The I. W. W. is still maintaining a corps of picketers.

Glenn County supervisors have granted the request of many farmers to make appropriation for expenses of farm adviser's office.

One Red Bluff, Tehama County, blackberry grower claims to have produced $11.65 worth of berries on three vines which were planted three years.

The state highway between Davis and Woodland is showing some activity, and it is thought the big strings of workers will soon have a fine roadway connecting these two cities.

The California Canneries Company reports large shipments of canned fruit to Europe just prior to the outbreak of the war. Over 150,000 cases of these goods will go through the Panama Canal.

Red spider, or yellow mite, continues to be a pest in many Sacramento Valley orchards. Sulphur in some form of liquid or dust spray, will hold it in check, but it must be persistently followed up.

Eight-hour law discussion is a topic of more than usual interest in Northern California. Business men and farmers at Willows in Glenn County, are organizing to do everything in their power to defeat the measure.

The poultry association at Willows, Glenn County, will hold its next annual November 18 to 21. The Women's Improvement Club will unite with the poultry people and give at the same time a chrysanthemum show.

Sacramento Valley farmers, who have hay to feed, are finding that cattle or sheep for feeding are very scarce and high in price. Usually some of the sheep and lambs that come out from the mountain ranges in the fall are too thin for slaughter and must be sold at a lower price than the fat animals, thereby giving the farmer with feed an opportunity to market his hay and make a profit besides. Because of the abundance of feed on all of the ranges and everywhere else, stockmen report that all stock will come out fat.

Central California

Patterson, Stanislaus County, now proposes to have a cheese factory.

Green alfalfa in barn is charged with being cause of a $2000 fire loss.

Yettem, Tulare County, has been shipping Muscat grapes for some time.

Farm Adviser Mayhew of Madera County was installed in office last week.

Porterville, Tulare County, is shipping some of the new fall crop of lemons.

Several successful plantings of rice have been made in the section about Tulare.

Ceres, Stanislaus County, expects to ship out a carload of honey within a few days.

Alpaugh, Tulare County has shipped 65 carloads of beets to the sugar factory at Visalia.

Kingsburg, Fresno County, sometimes ships as high as seven cars of fresh peaches daily.

Kern County is moving for a $2,500,000 road bond to supplement the state highway system.

Watsonville's Bellflowers are now declared to be ripe and going to the market in large quantities.

Kern County has alfalfa claimed to be eight feet tall and running 12 to 14 tons to the acre per season.

Fruit growers of Ceres, Stanislaus County, are discussing cooperation in order to secure more just returns.

The San Joaquin Valley is shipping about 60 cars of grapes daily, the prices ranging from $1.15 to $2.00.

The Poultry and Pet Stock Association of Stanislaus County is perfecting plans for its show December 1 to 5.

The state highway between Fresno and San Francisco is being rushed and it is thought the line will be completed this fall.

A shipment of five carloads of steers was made to San Francisco recently by Rodden Brothers of Oakdale, Stanislaus County.

The agricultural club of the Dinuba high school has decided to make exhibits at the Fresno and Tulare county fairs this fall.

The first semi-annual convention of the Inland Waterways Association of California will be held at Stockton, September 24, 25 and 26.

The July report of the Tulare Cow Testing Association gives the highest herd average per cow in the association as 35.3 pounds of butter fat for the month. The highest individual record is 50.01 pounds of butter fat credited to a Holstein cow.

Fairmead farmers are now getting top prices for butterfat. Two creameries are collecting cream from the farmers; one is a cooperative creamery owned by farmers and managed by A. R. Bates. The creamery building has just been completed with the most modern equipment, sanitary in every way. Mr. Bates says the creamery will gather cream daily and will pay the highest market prices at all times and guarantee satisfaction. The other is the Sierra Creamery, owned by A. L. Sayre.

Southern California

Heber is to have a new cotton gin.

San Bernardino County is asking for a farm adviser.

Cotton in the Imperial Valley is by far the heaviest crop ever.

Orange County is engaged in its harvest of blackeye beans.

San Bernardino County is now talking of her need for a farm adviser.

The big new cotton gin at Calipatria, Imperial County, is now starting on the new crop.

The Order of Railway Conductors in this state has announced its opposition to the proposed eight-hour law.

Brush fires in the upper end of the San Fernando Valley of Los Angeles County have kept rangers busy the last few days.

Prices of lemons are said to be going up as heavier and heavier demands are made by the East for California fruit.

Cotton growers of Imperial Valley have appealed to Washington for a fiscal agent who shall advance money for crop operations.

Orange County reports walnuts beginning to drop. The crop is maturing a month earlier than usual owing, it is supposed, to the mild winter.

Imperial Valley is urging settlers along both sides of the Colorado to join with it in requesting government aid for protection from river overflows.

The Calipatria, Imperial County, creamery and ice and cold storage company is hoping for early construction of a plant, plans for which are completed.

The sugar factory at Chino, San Bernardino County, commenced its season's operations on August 15. There are about 6000 acres of beets in the Chino section.

The Palo Verde, Coachella and Imperial Valleys are now receiving power from the Sierra Nevada. This is said to be the longest transmission line in the world.

Incompetent dairy inspection is alleged to be the cause of the failure of the Calexico creamery and a strong movement has been started to secure careful inspection service.

Bean growers are pleased at the price of bean bags which the San Quentin state prison has recently made. They are being offered at six cents, while the Calcutta bags, which have been used, cost 6¼ and 6⅜.

Cotton picking is in full swing in the Heber district of the Imperial Valley. A large number of colored pickers have been imported from cotton plantations of the southern states. Because of the hot weather the men rest during the middle of the day, picking early in the morning and late in the afternoon.

Bean growers and threshers of Orange County are at war over threshing prices. Prior to last year the price was 25 cents per 100 pounds, and last year because of an exceptionally small crop a special agreement was made at 30 cents; this year the threshers want the increased price with an enormous crop to thresh.

The Coast

The Oregon wool clip will produce a crop worth $2,700,000.

Elberta peach day was observed at Hurricane, Utah, August 18-19.

The Yuma Valley of Arizona reports a fine crop of alfalfa seed.

The hop market at Portland, Oregon, is exceptionally strong at about 16 cents.

Crops at Pomeroy, Washington, are injured over 50 per cent by grasshoppers.

One of the biggest productive industries of Prosser, Washington, is cantaloupe growing.

Poultrymen of Washington are planning to organize a state association at the time of the Interstate Fair.

The Lewiston (Idaho) Apple Growers' Association will market its fruit through the North Pacific Fruit Distributors.

Yakima apples carried off a first prize at the International Apple Shippers' Show held in Boston the first of the month.

Heavy shipments of California cantaloupes are congesting the Seattle markets, which are already full of local melons.

Orchardists at Silver Lake, Oregon, are finding thousands of dead rabbits, thought to be the result of contagious disease.

Oregon hop growers are expecting to receive big prices on account of European hops being removed from competition by the war.

James J. Hill is distributing a bunch of 50 bulls throughout the Northwest. These are stock purchased in England by Prof. Shaw of Minnesota.

The North Pacific Fruit Distributors has increased its membership more than 1000 during the past month. Its membership now includes 7500 growers.

The Oregon state board of horticulture has arranged to have inspectors prepare comprehensive reports of fruit acreage and production in their districts to serve as a guide to fruit growers.

Alfalfa seed growers of Utah have secured the establishing of special frost stations and on warning of coming frost will cut. On account of the European war exceptionally high prices are anticipated.

Western Washington pear orchards have sent less fresh fruit to the East this year because of greater activity on the part of the canners. Five-year contracts have been made with many pear growers.

A National Poultry Congress, it is announced, will be held at Spokane during the time of the Inland Empire Poultry Show, December 14-19. The managers of the show expect to have big exhibits from coast and eastern sections.

An Austrian laborer at Colfax, Washington, has been arrested and charged with putting matches in the grain before threshing. Over 100 machines have been destroyed by mysterious fires this year. The cause has been finally traced to matches placed by dissatisfied laborers.

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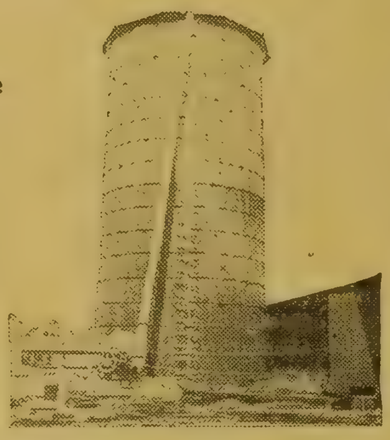

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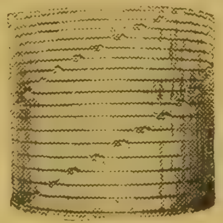

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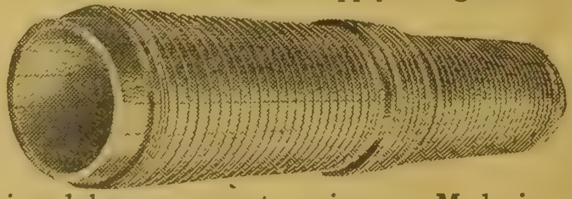

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Live Stock and Dairy

CALIFORNIA BUTTER SCORING CONTEST

The third entry scored at San Francisco July 27, 1914, is thus described by Leon M. Davis:

Departing somewhat from the usual custom, the third entry of the 1914 California Educational Butter Scoring Contest was held in San Francisco instead of at the University Farm, Davis. The butter was sent to one of the wholesale butter houses, and was held under market conditions for three days. The scoring took place Monday, July 27, and was done by Mr. T. J. Harris, official inspector of the San Francisco Wholesale Dairy Produce Exchange, H. H. Douglass and L. M. Davis of the University Dairy Division. With the exception of those who do not wish their scores published, those entries scoring 90 and above were as follows:

E. V. Allen, University Farm Creamery, Davis	95
J. C. Phillips, Delta Creamery, Imperial	94½
J. P. Dawson, Star Creamery, Holtville	93½
L. Larson, Sunset Creamery, Loleta	93½
Simon Koppes, Montague Creamery, Montague	93
Peter Peterson, Valley Flower Creamery, Ferndale	93
P. M. Becker, Grizzly Bluff Creamery, Grizzly Bluff	92½
W. J. Grinsell, Libby, McNeill & Libby, Loleta	92½
V. Baciarini, Suisun Creamery, Suisun	92
Will Paulson, Siskiyou Creamery, Greenview	92
T. P. Fisk, Swift & Co., Hardwick	91½
W. H. Gilbert, New Era Creamery, Gustine	91
N. Christenson, Dairymen's Co-op. Creamery, Tulare	91
G. G. Plunkett, Visalia Creamery, Visalia	91
Peter Peterson, Santa Rosa Creamery, Santa Rosa	90
Ed. Hooper, Spreckles Market Creamery, San Francisco	90

Hot Weather and Buttermaking.

The butter as a whole was a very good lot for this season of the year. Much of it came from the interior valleys, where hot weather is being experienced, and where natural conditions are decidedly unfavorable to good cream production. A study of the method blanks reveals that most of the creameries are receiving their cream daily or every other day, and suggests that the source of any flavor trouble which was present must have been due to the methods of holding the cream rather than to the length of holding. A very common criticism was high flavor, and this was caused in the majority of cases by the fact that the cream was high in acidity when received by the buttermaker.

It occasionally happens that dairymen will take very good care of their cream in the dairy, but this point will be neglected in transit. Or it may be that the creamery which employs a hauler will have made provision for keeping the cream cool on the wagon, but this effort will suffer a handicap through neglect on the part of the dairyman. When cream is delivered daily and still is criticised for high acid flavor it is evident that somewhere in the hauling there has been a slip. Just now is the time when dairymen should be paying special attention to the cooling of their cream. A material amount of good may be done by placing the cans of cream in cold water as soon as the separating is done. Cold cream and warm cream should never be mixed. Freshly separated cream should be cooled first before mixing with that from the previous skimming. A very satisfactory type of cooler is the tank cooler which may be made at the dairy with little expense. A barrel may be made to answer the purpose. The cold water entering this type of cooler should enter at the bottom and the overflow should be slightly lower than the upper level of the cream cans. Bulletin 209 of the California experiment station contains information relative to such a cooler, as well as a discussion of other matters interesting dairymen.

There is never a lot of butter examined but that some is found possessing those old stale flavors which are the result of holding cream too long, holding in dirty utensils, or in places where foreign flavors are absorbed. The activity of the butter inspector in San Francisco lately shows plainly that poor butter will not pass, and that some one has to pay the penalty for inferior goods. This will finally work back to the man who produces them, so the dairymen cannot afford to run the risk which poor cream invariably causes. First, let the dairyman produce a first grade article, then let him insist on its receiving good care in transit. If hauling it himself there should be no trouble, and if the creamery gathers it, let him insist on some form of protection on the cream wagon. Patrons who ship to some creameries have burlap jackets for their cans, and these are dampened to aid in keeping the cream cool.

BUTTER SCORING CONTEST AT THE STATE FAIR

California buttermakers should be interested in the big state fair contest which will be held in September. The premium lists, which are already out, show a pro rata prize fund of $400 for creamery butter, with liberal special prizes. Copies of the premium list may be obtained by writing to the secretary of the State Agricultural Society, Sacramento. Buttermakers who have been taking part in the educational scoring contest will be credited with their state fair score as their regular fourth entry. Every creamery buttermaker in California is urged to get in on this, and help to swell the dairy products exhibit. There is much to gain and nothing to lose.

Depraved appetite (pica) in cows, in which they eat dirt, gravel, etc., is generally the forerunner of a more serious affection of the bones and is due to a deficiency of bone forming elements in the food. Finely ground bone meal added to the food assists in overcoming this affection. Such cows should also have access to a piece of rock salt where it can be licked at will.

LIFE HISTORY OF THE TWO WARBLE FLIES

By Hans Glaser, Berlin.

The writer reports upon the continuation of his investigations into the life history of the two warble flies of cattle, undertaken for the committee for the control of warble flies. Altogether 314 warble flies were bred from 375 mature larvae that had spontaneously left their warbles; of these, 208 were the large Hypoderma bovis and 106 smaller H. lineata. In this connection it was found that the issuing of the larvae took place early in the morning and in by far the greatest number of cases while the host animals were standing or walking and only exceptionally while they were lying down; it begins mostly half or three-quarters of an hour after the animal stands up, and is interrupted if the animal lies down again. The writer explains this fact by the difference in the tension of the skin of the cattle.

On the same animal larvae of the large and of the small warble fly may be found. On issuing from the hide they are easily distinguished. The larvae of H. lineata are smaller and more slender than those of H. bovis and when mature they are gray brown, while those of the larger fly are greenish brown. The color is a sure test, even when small and slender larvae of the larger fly are found. In general the larvae of the smaller fly are somewhat earlier than the others.

The change into pupa takes place on warm and dry days mostly within 24 hours; in rainy and cold weather the process lasts two and four days. The larvae of H. lineata always require less time for the change than those of H. bovis. The pupal stage of the small fly averages 30 days, that is 14 days less than that of the larger fly. In general the males have a shorter pupal stage than the females; thus the latter, on issuing from the pupa, always find sufficient males with which to mate.

The emergence of the flies takes place in the early morning and by preference on fine sunny days; this explains their appearing in large numbers when the weather is fine. The swarming of Hypoderma lineata is for the most part in June, that of H. bovis in July.

The deposition of eggs takes place most frequently immediately after mating. Both the small and the large fly generally lay their eggs on the legs, and by preference on the hind legs a little below the hock. Besides this, the writer saw the flies frequently depositing their eggs on the belly of a calf used for experiment. Occasionally a fly would settle on the flanks or breast. No fecundated female ever deposits eggs on the back of the calf. The animal always became very excited on the approach of a female fly, whence the writer concludes that during June and July, and perhaps August, the gadding of cattle is due to warble flies. The fly causes its eggs to adhere to the hair of the host and the writer observed that the large warble fly sticks only one egg per hair, while the small fly sticks several of them on one hair, as many as 15 having been counted.

The egg of H. bovis is larger and more slender and more pointed at the free end than that of H. lineata. Further, the stalk which joins the egg of the large fly to the extension that embraces the hair is thinner than in the eggs of the smaller fly. The habit of the small warble fly of laying several eggs on one hair explains the fact that during oviposition it fastens itself more firmly to the hair than the other fly; it holds its ovipositor nearly parallel to the hide of the animal, while H. bovis sinks it almost vertically into the hair. The number of eggs that one fly can lay under favorable circumstances was determined by the writer for one H. lineata: it amounted to 550.

In the eggs very spiny maggots or bots develop after a few days; they issue from the eggs on to the hide of the animal; the writer assumes that the cattle take up the larvae rather than the eggs.

The writer has also conducted experiments in order to ascertain if the larvae of the two warble flies are able to penetrate into the skin of man and of animals. The result has always been negative as regards cattle, but in man, in one case (on the writer himself), a larvae penetrated the skin of the thigh.

Last year for the first time infection experiments could be carried out on six cattle with fecundated eggs and larvae. The results, however, will not be determined till the spring. The writer hopes soon to be able to report upon the most suitable methods of controlling this pest.

It has been proven that ropy or stringy milk can be carried from one place to another by milk utensils not being thoroughly cleaned and sterilized, and in this case the only remedy is a more thorough and careful cleaning.

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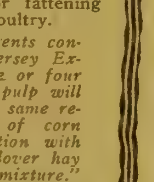

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GILBERT HESS
Doctor of Veterinary Science
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DR. HESS STOCK TONIC
A Conditioner and Worm Expeller

This preparation is the result of my lifetime experience as a doctor of veterinary science and doctor of medicine. It contains tonics for toning up the system and enriching the blood, laxatives for regulating the bowels and vermifuges for expelling worms. As a worm expeller, I say emphatically that this preparation has positively no equal, and I'll back this statement up with the strongest guarantee you ever read. Here it is:

☞ **So sure am I that Dr. Hess Stock Tonic will keep your stock healthy and expel worms that I have authorized my dealer in your town to supply you with enough tonic for all your stock and, if it does not do all I claim, just return the empty packages and get your money back.** ☜

West of Rockies: 25-lb. pail $2.25; 100-lb. sack $7.00. Smaller packages in proportion. Never sold by peddlers, but only by reputable dealers whom you know. I save you peddler's wagon, team and traveling expenses, as above prices prove.

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A splendid poultry tonic that shortens the moulting period. It gives the moulting hen vitality to force out the old quills, grow new feathers and get back on the job laying eggs all winter. It tones up the dormant egg organs and makes hens lay. Also helps chicks grow. Economical to use—a penny's worth is enough for 30 fowl per day. West of Rockies: 1½ lbs. 25c; 3 lbs. 50c; 7 lbs. $1.00; 25-lb. pail $3.00. Guaranteed.

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Kills lice on poultry and all farm stock. Dust the hens and chicks with it, sprinkle it on the roosts, in the cracks and dust bath. Also destroys bugs on cucumber, squash and melon vines, cabbage worms, slugs on rose bushes, etc. Comes in handy sifting-top cans. West of Rockies: 1 lb. 25c, 3 lbs. 60c. I guarantee it.

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ROOSTER DAY

Mr. Quisenberry, director of the Missouri State Poultry Association, writes regarding "Rooster Day" and states that over 250,000 birds were marketed on that day. All dealers united in helping along the "celebration" of this day. In fact, an entire week was given over to the disposal of roosters. The point was to reduce the loss which is greater in fertile than in infertile eggs. Mr. Quisenberry states that from this one cause alone between $1,000,000 and $2,000,000 dollars annually is lost in the state of Missouri.

From reports received from them thus far it is safe to say that a quarter of a million males were marketed by Missouri farmers during "Rooster Week." This movement also will result in the improvement of the quality of the poultry as most of these farmers will replace their scrub males with pure bred males. It will also result in the improvement of the cleanliness of the egg, the method of handling, and the improvement of the quality in general. The fact that farmers show enough interest in the quality of the eggs they market to dispose of their surplus males and market infertile eggs shows that they are making progress and taking some interest, and there will be a general improvement in the poultry business along all lines in this state as a result. The object in "Swatting the Rooster" is not to keep bacteria out of the egg as some seem to imagine, but to prevent chick development in fertile eggs. Before the eggs pass through the hands of the farmer, the country store, the local dealer the wholesale jobber and the retailer, and by the time they reach the consumer, there has been considerable delay. An egg does not have to be in an incubator for the embryo to grow and develop, but chick development takes place in a hot country store or a living room or on a hot country road, on the road to market, or in any place or under any circumstances where the temperature is as high as it is on most hot summer days. By eliminating the fertility, we prevent chick development which causes our greatest loss in summer months. I have some eggs on my desk which are over a year old. They have never decayed. The contents simply dried up. "Swat the Rooster" by all means if you have not already done so. Confine him if you wish to carry him over for breeding purposes another season.

POULTRY SHOW DATES

Sacramento, Sept. 12-19, 1914, State Fair Poultry show, J. L. McCarthy, secretary, Sacramento, Cal.

Riverside, Oct. 13-17, 1914, County Fair Poultry show, E. I. Hammond, secretary.

Anderson, Cal., Oct. 22-24, 1914, O. W. Dais, secretary.

Stockton, Cal., Oct. 28-31, 1914, W. H. Mackay, secretary.

Sacramento, Cal., Nov. 2-7, 1914, C. A. Wilkins, secretary, Sacramento, Cal.

Santa Cruz, Cal., Nov. 11-14, 1914 inclusive, E. J. Harran, secretary, Santa Cruz, Cal.

Petaluma, Cal., Nov. 11-16, 1914, Thomas McGuire, secretary.

San Mateo, Cal., Nov. 12-15, 1914, Fred West, show secretary, box 701, Burlingame.

Willows, Cal., Nov. 18-21, 1914, Otto F. Schuchard, secretary.

Oakland, Cal., Nov. 24-29, 1914, Chas. G. Hinds, secretary, 535 42nd street.

Pasadena, Cal., Dec. 1-5, 1914, M. D. Cartwright, secretary, Pasadena, Cal.

Modesto, Cal., Dec. 2-5, 1914, A. D. Roberts, secretary.

San Francisco, Cal., Dec. 8-13, 1914, inclusive, W. H. Ingram, secretary, Fruitvale, Cal.

Porterville, Cal., Dec. 15-17, 1914, A. D. Fawcett, secretary.

Phoenix, Ariz., Dec. 23-26, 1914, Arizona state show.

Newburg, Ore., Jan. 5-9, 1915, C. Duer, secretary.

Coeur d'Alene, Idaho, Jan. 6-9, 1915, O. A. Laaks, secretary.

Los Angeles, Cal., Jan. 6-12, 1915, Henry H. Mumford, secretary, Prospect avenue, South Pasadena, Cal.

Albany, Ore., Jan. 7-10, 1915, E. Schoel, secretary, Albany.

Tacoma, Wash., Dec. 29-Jan. 2, 1915, J. A. Caddey, secretary.

SILVER CUP FOR ORPINGTONS

In addition to the cups offered by the National Single Comb Buff Orpington Club for the National, Branch and State meets for 1914-15, a plan has been evolved whereby every poultry show in the world may secure a cup for best display of Single Comb Buff Orpingtons. Also five beautiful ribbons, suspended from emblematic medallions. Whether your show coops 100 or 5000 birds, write for full particulars. No show is too small to be included in this offer. M. S. Brady, secretary, Richards, Mo.

POULTRY NOTES

In parts of England turkeys are fattened chiefly on Indian corn, scalded Indian meal and boiled potatoes, with home-grown corn for a change.

It is claimed that the most delicious, juicy broiler that an epicure can fancy is a turkey poult of about six pounds weight, or when about two-thirds grown and of medium size. Many a young male two-thirds grown, would be too large to broil; if rather large, however, the breast may be gashed, and thus more easily cooked through, but it must not be dried.

The old way of carrying fowls by their legs or by the wings is not practiced by the present-day poultrymen. It is a cruel practice. Holding the fowl firmly by the legs and allowing the body to rest on the arm is a much better method.

It takes about two weeks to fatten a duck for market.

When the Indian Runner duck has reached a marketable age she has nearly completed her growth and has little left to do but complete her plumage and begin to lay.

A little granulated charcoal mixed in the soft food will generally check bowel trouble in chicks.

The writer almost daily receives letters asking for cures for ailments in fowls. The bulk of these at certain times of the year (principally winter) call for cholera cures. When the method of feeding is inquired into it is found that corn is the principal if not the exclusive grain given and the only grit available is some gravel, mostly round pebbles. This heavy feeding of corn with a lack of sharp grit is the cause of the complaints that come from the western states.

Close observation is essential to successful feeding. Prof. Lambert said: "The proper way to feed is to take a pail of feed in one hand and a pail of common sense in the other."

We must remember that the laying hen is the paying hen; that after a hen has laid enough eggs to pay for her keep for the year, then all the eggs she produces will be on the profit side of the ledger. So it stands us in hand to breed for the great layers. It can and is being done.

Hens that do not have enough green food supplied by the feeder sometimes eat too much of the tough, dry grass which they find on the ground when let out and become crop bound.

Good succulent green stuff should be on hand at all times. It should form a good part of the daily ration, for chicks need bulk as well as nourishment.

Successful Feeders!

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Questions and Answers

THE EDITOR AND STAFF

Questions to be answered in this department should be received at this office one week before reply is expected. Write plainly on one side of the paper and sign full name and address. Unsigned communications receive no attention.

Trees Near Line.

If A plants gum and other trees one to three feet from B's fence with the result that nothing will grow on B's land for a distance of 10 to 12 feet from the trees, what redress has B?—Subscriber.

B cannot compel A to remove the trees, but if he can make proof of damage to his land we doubt not there would be good cause for action for actual damages proven. Of course, B can cut a deep trench which will stop the roots from spreading onto his land and taking the nourishment from the soil. This should be a case where a neighborly settlement should be easily made for it is hardly just for one man to use property of another to grow large trees, but there is no law which covers the case.

Tamarisk.

I send small branch from tree. What is its name? It is deciduous, grows rank and beautiful every summer.—Subscriber, Yucaipa.

This is the common tamarisk, and a beautiful tree.

Pruning Live Oak.

We have live oaks dug from the hills and planted. They have made a wonderful growth but we wish to prune and would like to know at what period of the year it should be done? The growth seems to be largely down, that is, of a weeping habit.—Subscriber, Yucaipa.

We do not think there would be any particular injury in pruning at almost any period, though freer cutting should perhaps be in the springtime, say from January to March. The weeping habit cannot be controlled, that is probably the nature of the tree and the cutting off of lower branches, while securing temporary advantage, will not permanently change the habit of growth.

Hog Wallow.

Where hogs have plenty of room and shade is there any advantage in building a cement pond for them to wallow in?—Subscriber, Lakeside.

On this point we quote from Coburn's Swine in America:

"Where it is found desirable to use water from a surface source, the best plan is to construct a pond which will afford a minimum of danger, and to fence it so that the stock cannot get at it directly. The water may be supplied in a trough, through a pipe in the dam.

"Stockmen differ widely as to the advisability of hog wallows, some of the most successful breeders heartily favoring them, while by others they are vehemently opposed. Some maintain that a wallow is a benefit and almost as necessary as the feed trough, and others would not permit one on their farms. W. H. Haskell, warden of the Kansas state penitentiary, says that 25 years experience in raising hogs in large and small herds has convinced him that the first step to take in arranging a hog lot or pasture, is to fence out any running or pond water so securely that the hogs cannot get to it. A herd of 600 hogs is maintained at the Kansas penitentiary, and Mr. Haskell says that prior to the adoption of this plan, considerable loss was experienced from cholera and other diseases, and that exclusion from all surface water apparently put an end to such losses.

"A. J. Lovejoy says: 'I have a good many lots and not a water hole in them. Hogs will stand more traveling if kept dry. They may be kept from getting overheated by having good shade. We use temporary sheds 16 feet square, covered with brush so the water may leak through, but they never get muddy.'

"On the contrary, N. H. Gentry says: 'Creating a breed of hogs that do not like to wallow is going outside of nature. People take mud baths for rheumatism. You may have a clean brook, but the hogs won't like it. I built boxes for them to bathe in, and five minutes after the hogs got out they would be dry. Earth is a good disinfectant. I do not believe in a filthy place, but I never saw a hog that did not like a mudhole, and when he gets in it he does not want water but wants to wallow in the mud. It cleans the scurf from his skin. If before taking him to an exhibition you let a hog wallow in mud, you secure a skin finish you cannot obtain in any other way. Nothing is more soothing than mud. I tried to believe for years that it was not for the hog's good, but I tell you that depriving a hog of his mud bath is against nature. Nature is a pretty risky thing, either to play or fight with. I do not believe all stiff hogs have rheumatism. I had an imported sow that had never eaten corn in her life, and she foundered and to her death was stiff; as plain a case of foundering as I ever saw. I do not believe in fighting nature. What is better than to have the hogs go to a shady place and wallow, without too much water? I believe in mud baths, but I keep my hogs away from manure heaps, and always have shade over the wallows'."

For us, we prefer the wallow.

Planting Rose Seed.

How should rose seeds be planted? Should they be clipped before planting?—Subscriber, Pasadena.

Seeds of roses are best planted as soon as ripe. No special treatment is necessary so far as professional growers are aware though more light is desired. The most prominent of local rose growers and hybridizers, once applied to me for more specific information on the subject, stating that he had but indifferent success with rose seeds though he had personally visited the leading growers of Europe and looked into the matter thoroughly.—E. B.

* * *

From Bailey's Cyclopedia of American Horticulture we quote regarding propagation of roses from seed:

"Propagation of Roses.—The rose is propagated by seeds, cuttings, grafting or budding, by layers and by division. The genus is so large and diversified and our requirements are so many that the whole art of the propagator is needed to satisfy the claims of the Queen of Flowers.

"Seeds.—Roses are grown from seeds not only to obtain new varieties but also because many true species are economically procured in this way, e. g., R. canina, R. multiflora, R. ferruginea, R. rugosa, R. rubiginosa, etc. The seeds should be gathered in autumn and at once stratified with moist sand or allowed to ferment in tubs, with a little water and kept in a fairly warm place. When well rotted they can be easily rubbed and washed clean and should be planted at once, either in carefully prepared and well-manured beds out of doors or in pans or flats in a cool greenhouse. It is sometimes advised that the hips should first be dried and then rubbed clean, but this method often causes delay in germination, a matter sufficiently troublesome without additional complications. Whether they are planted under glass or in the garden it is difficult to forecast their coming up. It may be within a few weeks, e. g., R. multiflora under glass; or at the beginning of the second growing season after planting, e. g., sweetbrier seed, planted out of doors in November, 1898, may be expected to germinate in the spring of 1900, while R. rugosa sown at the same time may come up the following spring, i. e., in 1899, or, a season intervening, it will appear with the sweetbrier in 1900. Stratifying or fermenting the seeds tends to secure uniform germination within a reasonable time. It has also been suggested, and many things confirm the idea, that early gathering helps to hasten germination; in other words, do not wait for excessive ripeness, but pick the hips as soon as the seeds harden, sometime before the fruit is deep red. Until these matters are better understood, all rose seed sown out of doors, either in autumn or spring, should be mulched two inches deep with pine needles or other litter. Frequent examinations should be made in spring and the covering at once removed when the seedlings appear; if they do not appear let the mulch remain to keep down weeds and retain moisture in the seed-bed. Pans or flats in which seed has been planted should be kept at least 18 months before discarding, with the soil always moist. Notwithstanding the difficulties of germination, the young seedlings make most satisfactory growth and can generally be transplanted into nursery rows when one year old. When two years old they are fit for permanent planting. A winter protection of pine boughs is helpful to the young plants. Some seedling roses are extremely precocious, blooming before they are one year old, e. g., some hybrid perpetuals and polyantha roses. The first flowers of seedling roses do not always indicate their real character; in hybridizing it is well to wait for the second or third season before discarding."

Gape Worms.

Our chickens are affected with a disease which causes them to stretch their necks, close the eyes, and seem to swallow hard. They often wheeze as though breathing with difficulty. So far only the young chickens seem to be affected and they appear unthrifty.—Subscriber, Riverside.

I should look first for gape worms. You can only find out whether they are in the throat by inserting a loop of horsehair, a stripped feather tip or a wire gape-worm extractor. Dr. Prince T. Woods, in "Reliable Poultry Remedies," thus describes the operation: "Prepare a solution of one tea-

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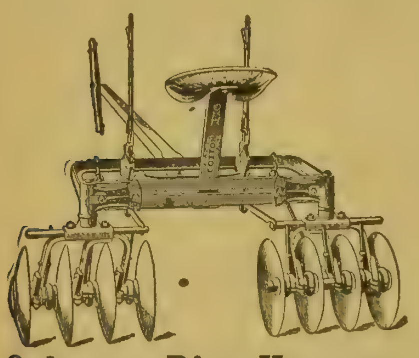
spoon creolin in a pint of cold water. Hold the chick firmly in the left hand with its neck well stretched and head firmly between the thumb and finger. The mouth should be open and the neck held straight out from the body. With the chick held firmly and neck well stretched, dip the extractor in the creolin solution, shake off any excess of fluid, insert extractor gently into the windpipe, and withdraw it with a slightly twisting motion. This will bring out most of the worms, and any which remain will be killed by contact with the creolin solution. Be gentle and keep your hand steady."

The symptoms of gapes and bronchitis are very similar, and there is absolutely no way of knowing which it is except by looking for the worms. If, after several trials, you do not succeed in bringing out any worms, you may conclude that it is bronchitis and give a teaspoon of the following mixture two days in succession: One teaspoon castor or olive oil, 10 drops turpentine, five drops of either the syrup or the wine of ipecac.

Mix well as many teaspoons as you expect to need and give for two days. Keep the birds in a warm, dry place and feed bread and milk or a mash moistened with milk. Look for mold in the feed or litter. There is some good reason for the unthriftiness of these chicks.—J. A. K.



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Destroying Blackberry Roots.

Is there any method of destroying blackberry roots without digging them out?—Subscriber, Hemet.

The best destroyer of blackberry roots is the hoe or hand cultivator. Of course, salt in sufficient quantity will destroy them, as will heavy applications of sulphate of iron solution, sulphuric acid, or even kerosene. These chemicals, however, are equally as injurious to any other growth. Carbon bisulphide will also prove effective and the soil will not be poisoned so long as with the other chemicals mentioned. This method of destroying by the use of chemicals would prove, we imagine, much more expensive than the liberal use of the hoe and shovel. If the ground is to be given over to crops permitting of clean cultivation it is comparatively easy to eliminate them but if a lawn is to be grown then it is another matter and it would be necessary to wait until the roots are entirely destroyed or removed.

Fungus on Snapdragons

Kindly inform me as to cause of fungous growth on snapdragon leaves and remedy for same. — Subscriber, Campbell.

One may as well attempt to account for the appearance of scarlet fever, diphtheria or smallpox in the human species. The fungus comes, and precisely why none can determine. Its appearance is due to the development of the spores or fruiting bodies. The best remedies are Bordeaux mixture or ammoniacal copper carbonate. The former is mostly used, but as it colors the foliage many prefer the latter. In all sprayings the remedy should be applied at the very earliest moment and, if an attack is anticipated, before the disease appears. When fungus once gets inside the plant tissue it is nearly impossible to destroy it, as nearly all fungicides prevent the spread or fruiting of the fungus on the leaf surface. Three or four sprayings are often necessary for complete eradication.—E. B.

Read This Letter:

Ambrosia Cream Co., Napa. Cal.
De Laval Dairy Supply Co., San Francisco, Cal.
Gentlemen:

The silo that I purchased from you this year has proven to be very satisfactory, and want to compliment you on the good clear 2x6 redwood staves that you used in the manufacturing of the same. There is no question as to the Ideal Green Feed Silo being superior to the resawed or home-made silos, as it is absolutely air-tight and is manufactured from first class material throughout.

In erecting my silo I did not use either a hammer or saw, except for the staging. I have been feeding out of the silo for several months now, and have yet to find any spoiled ensilage. No dairyman who expects to get the full results from his cows can afford to be without a silo, and from my experience with different silos, I am convinced that your Ideal Green Feed Silo is far superior to any other kind.

Yours very truly,
H. I. MIDDLETON.

Buy an Ideal Green Feed Silo Now
Write for Silo Circular for Full Information

De Laval Dairy Supply Co. San Francisco
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Scale on Oleander

Am sending twig cut from tree on my ranch. What is the scale-like matter on it and what is its cause and cure? The trouble has also spread to other trees. Is it contagious?—Subscriber, Nipoma.

The oleander leaves sent were a mass of black smut and the young of black scale. The scale insects were the cause of the smut, which comes because of honey dew exuded by the scale. Spraying the tree with distillate emulsion or any good contact spray would be beneficial and greatly reduce the pest, which is transferred from tree to tree either through the medium of the winds, feet of birds or otherwise. This particular scale infests a great many different plants. Even the common nightshade weed is often one mass of them and should be kept down. More valuable plants and trees should be treated with hydrocyanic acid gas.

Diseased Tree Bearing

Have several two-year-old lemon trees which were affected with gum disease, but are now healed over. Some of them are setting heavily with fruit. Should they be allowed to bear or should the fruit be taken off? Would you advise pruning the tree back?—Subscriber, Yorba Linda.

These questions can hardly be answered without knowing more as to the thrift of the tree. If it is in fairly good condition this will be indicated by the color of the leaves, their size and number. If in good condition there is no reason why some of the fruit should not be left on the trees. Pruning will stimulate more wood growth and put the tree in better condition for next year's crop.

Slugs.

Am enclosing leaves from Satsuma plum tree which is suffering, I believe, from fungous disease. Is there a remedy? When the leaves appeared in the spring they were yellow, then gradually turned green. The trees are three years old and the crop was not as heavy this season as last. The new leaves, the summer's growth, are not as badly affected as those formed earlier.—Subscriber, Newhall.

These leaves do not show appearance of fungous trouble so much as they do the depredations of some insect, or more probably, the slug. The tissue has been almost entirely destroyed, only the veins being left. If caused by slugs, they should have been given an application of air-slaked lime, which would very quickly have rid the trees of them. The yellowing in the spring when the leaves were first starting may have been caused by excess moisture in the soil or possibly by red spider. In any case it is too late to benefit these leaves this season.

Name of Bird.

In our preceding issue we have inquiry regarding the name of a bird. We now have from Mrs. A. E. Sussex, the following:

"In your issue of August 20, I note the request for the name of a bird. Although the description given is very meager, I should judge it was a shiny-crested fly-catcher or phainopepla niteus. They are shiny black, with inner webs of flight-feathers white. The female is a brownish gray; both are crested, and are a little smaller than a robin. Then there is another fly-catcher, very common in all parts of the state, the western black Phoebe or black-headed fly-catcher. It is a slaty black, darkest on head and breast. Under parts a light gray, white on outer tail feathers. About the same size as the former."

Also, Mr. Levi C. Kincaid writes:

"The bird asked about in 'Questions and Answers' on page 186 of issue of August 20, is the 'ash-throated fly-catcher' or pewee, as it is commonly called. It is of the genus muscicadae. Its chief food is flies and gnats, and it never eats bees. Nests in old wells, sheds, etc., and should never be molested.

Veterinary

Answers in this column by Dr. Wm. Petrie, 2714 South Harvard Blvd., Los Angeles, are without charge. For immediate mail answer remit $1.00. In writing questions give full symptoms or particulars of injury of animal.

Paralysis

I have some pigs weighing about 100 pounds each. Feed them milk, alfalfa hay and milo maize. They seem to lose the use of their hind quarters. Can you suggest a remedy? — Subscriber, Imperial.

Paralysis in pigs often follows their being confined in small quarters and fed heavily. Give them a field to run in and give them the following medicine: Salicylate of soda, two ounces, and tincture of juniper, enough to make one pint. Give each pig about two teaspoons in his feed once a day.

Malnutrition

I am anxious to know what is wrong with my 15-months-old heifer. She is always thin and the whites of her eyes seem to be bloodshot most of the time. She eats well, but never looks as strong as the rest that are the same age. She is of good stock and I would like very much to help her. What is wrong and what shall I do for her?—Subscriber, Orland.

Following are two prescriptions that will probably do her good: Raw linseed oil, one quart; turpentine, four ounces, and aloin, one ounce. Mix. Divide into two doses and give two days apart; also sulphate of magnesia, two pounds; chloride of sodium, one pound, and pulverized gentian, four ounces. Mix. Give a handful once a day.

Bad Teeth

I have a mare which recently developed a discharge from the right nostril, which continues intermittently. Before the discharge began I noticed a terrible odor from her breath, which still continues, although not so bad. The discharge is mostly clear, with some white lumps mixed with it, and does not come freely from the nostril unless the mare blows it out, which she does when being driven. The glands under the jaw on the affected side are swollen at times as large as a lima bean. The mare seems to have some trouble in masticating hay, turning her head so the right side is lowest. Otherwise she seems to be in very good health and is able to do her part of the work.—Subscriber, Acton.

There is probably a loose tooth in the right side of the upper jaw, probably the third or fourth upper molar. The tooth has been loosened or split by the horse biting on some hard substance in the feed, as a stone or nail. The swelling of the glands is caused by a little poison from the decayed tooth. It will be necessary to call on a veterinary dentist, who should be able to find the bad tooth and extract it.

Horse Sneezing

For the past six months my horse has been sneezing continually. What is the cause and is there a remedy?—Subscriber, Glendale.

Probably caught cold and has catarrh following it. Give him the following powders: Powdered gentian, three ounces; chlorate of potash, two ounces; and sulphate of iron, one ounce. Mix and make into 16 powders. Give one every night.

Kicked on Hock

I have a horse which was kicked on hock and which has been lame for some weeks. What can I apply that will aid in curing this trouble?—Subscriber, Burbank.

Have your druggist prepare the following liniment for you: Equal parts of spirits turpentine, spirits of camphor, aqua ammonia and oil origanum. Mix. Shake and apply twice a day. If it seems too strong dilute it with a little olive oil.

FOREST FIRES AFFECT STREAMFLOW

Residents of Wallace, Idaho, now claim that results of the disastrous forest fires in northern Idaho in 1910 are being made evident in the changed flow from a watershed then burned over, which furnishes the water supply of the city. This basin included an area of approximately 2000 acres and was formerly well timbered with trees from 50 to 200 years old. These were almost wholly destroyed by the fires of 1910. From this watershed the city gets its supply not only for domestic purposes, but also for the development of electricity for power and light, so that the maintenance of a considerable flow is essential to the city.

It is stated that before the fires the flow of the stream at its lowest stages was never below 1000 miner's inches, the unit of measurement which has been used. But since the fire, the records show that the minimum flow has fallen to about 250 miner's inches and it is now necessary for the company which furnishes water, light and power to expend a considerable amount of money each year in developing water from steam and to use a considerable part of this power in pumping water. Records of the weather bureau at Wallace show that the precipitation for the years since the fire has been about normal for the region. This seems to demonstrate to the townspeople that the unevenness in the flow must be due to the destruction of the forest cover of the watershed **and not to any** change in climate or precipitation.

In view of the situation, the forest service has undertaken to reforest the denuded watershed. Some planting has already been done and eventually all of the watershed which is included within national forest boundaries is to be reforested. The people of Wallace are taking considerable interest in the work and express themselves as thoroughly in sympathy with the effort that the service is making. The experts of the department, however, point out that the planting will probably have no immediate effect, yet it should influence run-off as soon as forest conditions are restored and re-establish eventually a more stable streamflow. In the meantime the forest officers are taking measurements of the stream in connection with the records of precipitation, to determine just what relation exists, and what results will follow reforestation.

TINKERITIS

By James A. King in Farm Engineering.

A fellow said to me the other day, "I've been thinking of buying a gas engine. But I am afraid I might not be able to run it. Some of my neighbors have had lots of trouble with their engines."

I told this man there was one thing he should always remember. That was that "tinkeritis" is more deadly than all other diseases to which gas engines are subject. The average man is only a grown-up boy. So many of us never outgrow the childish desire to tear the old clock to pieces to see what makes it run. We are too prone to do the same thing to a perfectly good gas engine. And in doing it we often make it into a worthless one.

When you buy an engine, have the dealer show you how to start it and to stop it. Have him show you these things over and over again. Show you step by step, explaining just why he does each thing. Try your own hand at the trick until you can do it with ease and confidence. Do not try to learn another thing than these fundamental essentials at this first lesson.

When the engine is set up, and you are left alone with it, be good. Don't try any fool nonsense with it. When you need it, start it: run it until you are through with it; then stop it. In the meantime leave it strictly alone, like dynamite.

I give you this advice, straight from the shoulder in this way, because I learned it by bitter experience.

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Potato diggers, planters, cutters, cultivators, harrows, plows, Holt tractor, sprayers, sundries.

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Ohio Improved Chester White (O. I. C.)—Four boars, March farrow left; 8 sows, June farrow, ready next month. Selected sows bred for October farrow; pigs ready to ship December 1st. Three herd boars in use. All stock cholera immune. Booking orders now. Crated and registered free. C. B. Cunningham, Mills, Sacramento County, Cal.

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For Sale—Young registered Berkshire boars and sows; fine strong stock; boars ready for service. Stanislaus Ranch Co., Crows Landing, Calif.

Glenview Poland China—Stock for sale. Chas. R. Hanna, R. F. D. No. 3, Riverside, Cal.

N. H. Locke Co., Lockeford, Cal.—Choice young Jersey bulls for sale.

TREES.

For Sale—One and two-year-old Washington Navels and Valencia Orange Trees. Eureka Lemons and Marsh seedless grapefruit, for Spring 1914 delivery. Write for prices, or call and examine stock at Morris Citrus Nurseries, Cor. Juanita and Valley Center, R. F. D., Box 34, San Dimas, Cal.

Now is the Time to book your order for fig trees. "My specialty." 25,000. Seventeen varieties, extra fine, well rooted, straight and branched, one and two year old trees. Price list on application. C. C. Terbush, R. 2, Box 543, San Gabriel, Cal.

For Sale—50,000 Sour Orange seed bed stock, finest quality, or will let to responsible party on percentage basis; also 2000 A1 late Valencias, two years old next spring, or might exchange for Washington navels. H. H. Eshelman, Soldiers' Home, Cal.

For Sale—A block of 3000 Valencias, 1000 navel and 1500 lemon trees, grown between orchard rows and must be moved at once. Prices right for quick deal. Also have budded and seedling Avocados. Smith-Roberts Nurseries, Tustin, Cal.

The 1200-Acre Nursery, growers of 1500 varieties of trees and plants. OREGON NURSERY CO. Orenco, Oregon. Sales office, 522 Chamber Commerce, Los Angeles, Cal.

1000 Avocado Seedlings—Pots, also can furnish nice plants, bare root, at low price. A. A. Quint, R. D. No. 2, Pasadena, Cal.

For Sale—Eureka Walnut Trees, budded on Native Black Walnuts. Choice stock. Order immediately. Don't delay. Wm. Holve, Fullerton, Cal.

Citrus Nurseries, Murphy Oil Company, East Whittier, California. Selected stock for sale; inspection invited.

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For Rent—400 to 750 acres of land in Tulare County. Five miles from the town of Tulare. Fifty acres now in alfalfa. Will put in as much more as desired. Improvements consist of house, barn, fine cow barn, pumping plant; also plenty ditch water. Fenced and cross fenced. This place is either suitable for stock grazing of all kinds or dairying. Can offer good proposition to right party. Address Peter Haack, 224 Byrne Building, Los Angeles, Cal.

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For Sale—[illegible] irrigation. New [illegible] house, barn and [illegible] buildings. Under new irrigation [illegible]. Excellent for truck garden, berries or chickens. Worth more money. Will sell within next [illegible] days for $1,750.00. Three-quarter miles from town. Anderson Realty Co., Anderson, Cal.

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Apple Orchards—Large and small, in the only apple producing section in California. The greatest section west of Missouri River. Write for booklet. Geo. W. Sill & Co., Watsonville, Cal.

Farmlands for Sale—Read our advertisement on page 211. I have what you are [illegible] for in farm lands. G. M. Rea.

Ranches, homes, acres, lots, exchange; send for free list. Wilson Bros., Santa Cruz.

POULTRY

How to Make Money—Mrs. A. Basley's latest Poultry Book is without exception the best ever written. The secret of how to raise every turkey hatched and the "Basley Formulas," now published for the first time, are worth many times the price of the book. The "Western Poultry Book" is a practical book by a practical woman. Price $1. Order from Cultivator Publishing Co.

For Sale or Exchange—Wanted, 100 pullets, Plymouth Rocks, R. I. Reds or Orpingtons, to feed my Burbank Spineless cactus to. You want the cactus, I want the chicks. 50c slabs for 50c pullets. Address or ship to H. L. Bauers Cactus Ranch, 4401 Hummell St., Los Angeles, Cal.

Poultry Wanted—We pay the highest market price for all the local poultry we can get, no matter how large the quantity; also fresh ranch eggs. We remit immediately. National Poultry Co., successors to Allaway & Layton Co., 607 E. Third St., Los Angeles, Cal.

Barred Rock Cockerels (Hawkins' Royal Blue Strain) ready for fall mating. All the popular breeds of baby chicks every week after Aug. 15th. Order early and avoid the rush. Enoch Crews, R. 1, Santa Cruz, Cal.

For Sale—Japanese Silkie—$5.00 for trio. Cockerels, $2.00 each until sold. These are the thoroughbred White Silkies, with feathers on their legs; fine pets. J. H. Brohaska, R. F. D. 57 A, Chula Vista, Cal.

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For Sale—Avocado Seeds (Alligator Pear) at $4.00 a 100; $35.00 a 1000. I also have to offer a few small yearling Avocado trees at $10.00 a 100. J. B. Wagner, Nurseryman, Pasadena, Cal.

Must Be Sold—1000 cuttings Burbank Spineless Cactus, $10.00 per hundred. Milch goat does and kids. Edgar Wooldridge, Lakeport, Lake Co., Cal.

$ $ $ SpineleSS CactuS—All varieties Burbank's fruiting and forage plants. 10c up. Plant now. Booklet free. Wonderful new Giant Rhubarb. Black Bros.' Nursery, 455 Lucas, Los Angeles. $ $ $ $ $ $ $ $ $

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For Sale—Canada field peas, 3 cents per pound. Address Foss Bros., Lakeside, Cal., or residence, Alpine, Cal.

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It pays to keep bees on the farm, raise your own honey, make considerable profit besides. We can supply gentle Italian bees at 3.50 for five frame colony, five dollars for ten frames, and ship anywhere by express. Write for our free price list of bees, instruction books, etc. Spencer Apiaries Co., Box 14, Nordhoff, Cal.

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Wanted—Place as foreman or superintendent. Thorough in all lines of farming, fruit growing and irrigation. Experienced in working all kinds of labor. Address Box F. H., Cultivator.

Wanted to Exchange—For a side hill plow, a 12-inch John Deere plow in good condition. Wm. T. Mantz, R. D. 12, Box 367 A, Los Angeles, Cal.

Puppy Wanted—Send prices on Collie and Shepherd [illegible] to James McKee, 539 Grand avenue, Riverside, Cal.

Wanted—To hear from owner of good farm or unimproved land for sale. Send description. Northwestern Business Agency, Minneapolis, Minn.

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For Sale—New Zealand Reds. No other rabbits raised on the [illegible] which are the best and most [illegible] and gentle. Breeding does $4 [illegible] each; bred to first prize buck. [illegible] Mrs. C. A. [illegible], R. D. 8, Box [illegible], Los Angeles, Cal.

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Household Department

SIR BUNNY O'RABBIT

Sir Bunny O'Rabbit was dashing and bold
To the tip of his elegant ear;
He wore a bycocket embroidered in gold,
He carried a dirk that was fierce to behold,
And no one who saw him would need to be told
That he was a buccaneer—
A
Regular buccaneer!

He sailed in a lugger, "The Pride of the Sea,"
And he scoffed at the notion of fear;
His raids were so carefully managed that he
Was always at home in good season for tea,
To eat enough lettuce and carrots for three,
For he was a buccaneer—
A
Vigorous buccaneer.

Though he and his crew were a desperate lot,
You will all be delighted to hear
That none of his prisoners ever was shot,
Or even deprived of what money he'd got,
For Bunny declared, "I am certainly not
That kind of a buccaneer—
THAT
Kind of a buccaneer!"

His victims were treated, I'm happy to say,
With a kindness so warm and sincere.
That sailors began to perceive it would pay
To let Bunny capture them every day,
Because he would dine them and send them away—
Benevolent buccaneer—
BE-
Nevolent buccaneer!

And thus it went on till he made up his mind
At the end of a profitless year,
That, taking the running expenses combined
With what he laid out on the captives he dined,
There wasn't a dollar in being that kind
Of ridiculous buccaneer—
RI-
Diculous buccaneer!

So now on the beach the proud lugger careens,
And Sir Bunny's not anywhere near.
He's living in Wales, amid pastoral scenes,
An honest Welsh Rabbit of moderate means,
Devoted to culture of succulent greens.
No longer a buccaneer—
NO
Longer a buccaneer!

—Youth's Companion.

MAJOR'S LIVE PINCUSHION

Major was a brave dog. It was very seldom that he cried or howled. So every one within hearing turned out to see what was the matter when they heard him coming up the hill, whining and crying. Tessie, the white cat, left her kittens and came. Johnnie Rabbit forsook a nice head of lettuce to join her; stately Peter, the Buff Cochin rooster, stalked to the hilltop and even old, lame Dickey Dumpling, the pony, stopped munching oats and asked what was the matter with his friend, Major.

Maje was coming very swiftly, running like the wind and yet stopping, once in a while, to dig at his nose and cry. The people at the Big House heard him and they all came out, too, wondering what the matter could be. Major's brother, Captain, was so anxious that he ran to meet his brother.

"What does ail you, Major," he barked, "and what are those queer things on your muzzle?"

"On it," howled Major, "in it, you mean."

"Well, what are they, anyway?" asked the other.

"Needles, needles and pins and swords," said Major, "that's what they are! And they're killing me."

"Where'd you get them?" said Captain, in astonishment.

Poor Maje howled again. No wonder, for there were at least ten of the sharp things in his nose and lips and he could hardly speak.

"I met a walking pincushion or needle cushion or something like it," he mumbled, "down by the brook, and I said: 'Get away, what are you doing here,' and just poked him a little, he was so slow to move, and he slung himself around and see what he did to me," moaned the unhappy dog.

"Bow, wow," barked Captain, "he must be crazed with pain. Whoever heard of such a thing?"

The people at the Big House had. When Major, head hanging in both shame and pain, was called to his master, that gentleman exclaimed: "Well, well, old fellow, this is hard luck, indeed. You've met a creature that I haven't seen one of for years."

"What is it?" every one asked all at once, and he replied: "A porcupine, and it's left some of its quills for poor Maje to remember him by. Don't feel ashamed, old boy. No one blames you for getting the worst of it."

"There," thought Captain, "it wasn't a walking pincushion at all. It was a porcupine, whatever that may be."

"Come, Maje," said his master, "it will take me a good hour to doctor your wounds and then we'll go back and see if we can find the prickly rascal. I suppose he's after nuts. No danger of his being gone; he's too slow a creature for that."

Major whined more than once while the barbs were being taken out, but he seemed to know that he was being helped and tried to be patient and grateful.

Captain went out and looked down toward the brook. He was very curious about this queer thing that had hurt his brother and that the master had not seen for so long a time. Captain was much less rash than his brother so no one called him back when he started toward the place where Major had been wounded. He asked Tessie, Johnnie, Peter and Dickey to go with him, but no one wanted to, and they all told him he had better wait until the master was ready to go with him.

Captain said he would go a little way and see if the curious thing had gone. He wouldn't touch it, if it were there. It might be gone before the others were ready and he really wanted to see a "walking pincushion," if such a thing existed. Down in the grove by the water, he saw something very odd. He saw a short-legged, stubby-tailed, furry animal that had, yes, there could be no mistake about it, needles coming out from the fur. The stubby tail possessed them also, but there were none on the little snub nose that stuck out from between two small black eyes. He was climbing a tree when Captain came along and the swiftness with which he went up the tree surprised the dog, for had not his mas-

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THEODORE PAYNE
345 So. Main St. Los Angeles

ter, who knew about everything, said that the creature was "slow."

"Why, he can even beat Tessie at climbing, thought Captain, "and that is saying a good deal."

"Seems to have a few needles, but not enough to be called a cushion," he said, and then to let the animal know he was there he barked very pleasantly. "Bow, wow, how do you do?"

Then the creature became a cushion indeed, bristling with sharp points as he came down the tree and stood on the ground looking at Captain. All over the brown body they stood up and the stub of a tail was bristling with the pointed quills. He didn't say "bow, wow," but he did put his head down between his fore feet and give a sort of a grunt with a few squeaks mixed in. Captain understood. The pincushion meant to say: "Keep off, don't come near me."

Captain and the Pincushion

Long afterward when Captain was a bigger and wiser dog, he knew why the porcupine hid its nose. A very light blow on its poor nose will kill it at once. The creature knows this and always tries to protect this weak point.

"Major isn't bright," thought Captain, "now I bet he rushed right in and grabbed the chap, without thinking of the swords he carries. Say, old man," he called, "what did you jab my brother for?"

The porcupine calmed down a little.

"That dog," he squealed, "was he your brother?"

"Yes," answered Captain, "and he's mad clear through at you."

"Can't help it," grunted the funny bunch of fur and barbs. "I wasn't bothering him nor touching anything that belongs to him. I was just looking around for a few nuts and twigs, just as much mine as his, and he came rushing in here and ordered me out. I ain't going to hurry for anyone; in fact, I can't hurry if I want to, and while I was trying to tell him so, he rushed in and tried to bite me. I leave it to Mr. Woodchuck over there if it wasn't just so."

"Oh, never mind the woodchuck," said Captain, "I believe you, that's like Maje, he never can wait or let anything alone."

"He'll let me alone," said the porcupine, "if he knows when he's well off."

"Where'd you come from?" asked Captain, "if you don't mind telling a fellow."

"From the Mountain Woods," replied the creature, "since the great fire there this summer food is hard to find and we have to look some distance for anything good. Billy Possum brought word over that there were nuts and nice twigs going to waste here and that I had better come and get some."

"Well," said Captain, "if I were you, I'd be getting back now, for the master is fixing up my brother's nose and the first thing you know they will be down here, and then you'll see trouble."

"I ain't afraid," boasted the porcupine, "I can keep them off."

"Don't be so sure," advised the kind-hearted dog, and, perhaps the live pincushion, down in his stubborn heart, thought the dog right, for he soon began to waddle off with such a funny gait that the polite Captain nearly choked, trying to keep from laughing.

"It's a pity there are not trees for him to climb," he thought, "for he is the poorest walker I ever saw. He makes me think of Tessie's week old kittens when they try to travel. He's certainly the most ungainly thing that ever come on the place. It would be a shame to harm such an unfortunate creature, even if he wasn't full of spears. Maje was a little right, after all, he is kind of pincushiony, only they are pretty big pins."

When Major and his master came down to the brook, Captain was gone. Everything was still and there was nothing bigger than a bird to be seen anywhere. Bobby Woodchuck was there, but he kept out of sight, for he knew Major of old, and even if the dog's muzzle was sore he might try to catch Bob, if he showed his small head. It had taken so long to pick the quills from Major's nose and lips that even the slow poke pincushion who couldn't hurry if he would, and wouldn't hurry if he could, had waddled into safety and was where no dog dared venture after a bristling sharp-coated porcupine. — Orange Judd Farmer.

IDEAS FOR THE COOK

Written for the California Cultivator

By Isabel Cottle

Breakfast

Stewed Strawberries
Cheese Omelet Broiled Ham
Baking Powder Biscuits Coffee

Lunch or Supper

Creamed Sardines on Toast
Stuffed Potatoes
String Beans Buttered Beets
Rice Pudding
Tea

Dinner

Cream of Turnip Soup
Individual Meat Pies Egg Plant
Peach and Almond Salad
Fresh Figs Cream
Chinese Cakes Coffee

Cream of Turnip Soup.

One cup hot mashed turnips, one-half cup hot mashed potato, one tablespoon flour, one teaspoon salt, one-half an onion (this may be cooked with the turnip), two cups scalded milk, two tablespoons butter, pepper to taste. Mix turnip, potato and scalded milk. Melt butter, add the flour, salt and pepper, when well blended add the turnip mixture and onion cut in small pieces. Cook in a double boiler for twenty minutes, stirring occasionally, strain and serve.

Creamed Sardines.

Two small cans sardines, lump of butter size of walnut, two tablespoons flour, two cups rich milk, one chopped pimiento, salt. Drain oil from one can sardines, place with the lump of butter in hot skillet, when melted add flour and stir until well blended. Gradually add milk. When smooth and bubbling salt to taste, add chopped pimiento and sardines. As soon as heated through pour over rounds of hot buttered toast.

Chinese Cakes.

Beat yolks of six eggs, to each yolk add a tablespoon of sugar and one large tablespoon of flour. Flavor with lemon extract and one teaspoon ground cinnamon. Drop on a hot pan, well greased and bake in a quick oven. Make the cakes small.

Peach and Almond Salad.

Blanch and cut almonds in thin slices, using one-fifth as much in bulk of sliced almonds as of finely sliced peaches. Serve on lettuce leaves with a fruit salad dressing made by boiling one cup of sugar with one-half cup of water for five minutes, then pouring on the well-beaten yolks of three eggs. Return to the fire in double boiler and cook, stirring constantly, until it thickens. Cool and add the juice of two lemons.

QUITE TRUTHFUL

The man from the city was inspecting the country boarding house with the idea of spending the summer there with his family. "Of course," he began, "you have plenty of pure milk and the best butter in the state on your table."

"No."

"Fresh beef and lamb every day, killed on the premises?"

"I hain't."

"All kinds of vegetables in abundance, large orchard of choice fruits; cultivated berries picked every morning?"

"Say, mister! If I had all them things on this farm I wouldn't have to take boarders."

One boy in school beats a dozen in a poolroom.

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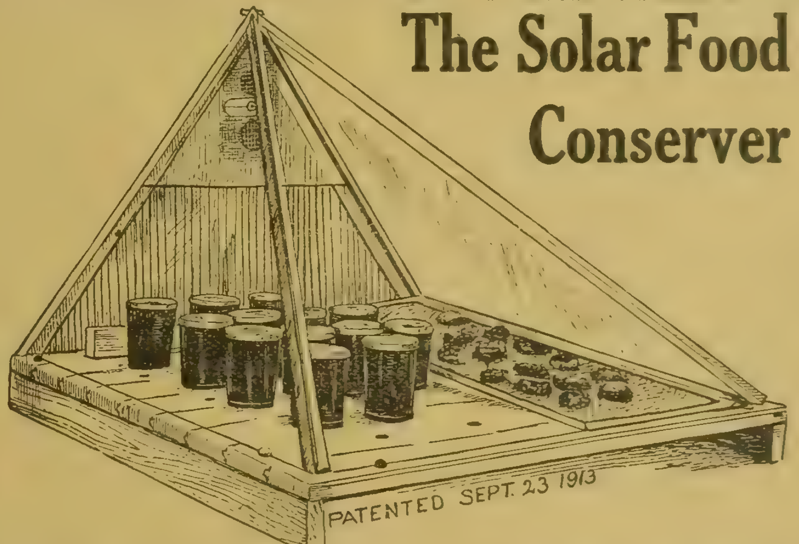

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San Francisco--Los Angeles Produce Markets

Los Angeles Market

LOS ANGELES, Aug. 26, 1914.

The prices given below, except where otherwise noted, are those made by wholesale or commission houses to retailers, and are intended to give producers the range of the market rather than an indication of prices which they will secure. Jobbers' quotations to producers are not given.

BUTTER

A two-cent advance was made in the closing days of last week on extras. No indications of change as we go to press. Receipts about 60,000 pounds daily.

Prices to trade 4 cents above following quotations:

Creamery Extras	28
Firsts	25
Country	20@21
Ladle	20

CHEESE

Prices to trade 1 and 2 cents higher:

Eastern Daisy	19
California Fresh	14½@15
Domestic Swiss	19@20
Imported Swiss	40
Longhorn	19½@20
Oregon Triplets	17½@18

EGGS AND POULTRY

Receipts of local eggs often run under 200 cases with about double that number coming from northern points. Slight temporary decline is noted since last quotations.

Prices to trade 3 cents higher than following quotations:

Fresh ranch, case counts	34
Candled	36@37
Northern Case Count	34½
Petaluma-Santa Rosa	35½

Price to producer:

Hens, lb.	13@18
Roosters	8
Broilers, lb.	17
Fryers	15
Roasters, lb.	15
Turkeys	18@26
Ducks	12
Geese	14
Squabs, doz.	2.00

LIVE STOCK

The following quotations are f. o. b. Los Angeles on all stock:

Hogs, 175 to 200 lbs., per cwt.	10.25
Prime Steers	7¼@7½
Heifers	6¼@6½
Calves, lb.	8½
Sheep—	
Ewes, head	4.00
Wethers	4.25@5.00
Lambs, head	4.50@4.75

POTATOES

Wholesale selling price:

Sweets, sack	2.00
Northern Burbanks, cwt.	1.40@1.50
Highland, Burbanks	1.40
Shimas	1.65@1.70

ONIONS

Wholesale selling price:

Australian Brown, cwt.	1.35@1.45
Silverskins, cwt.	2.00@2.25
Yellow Danvers, sack	1.35@1.45
Garlic	20@22½

VEGETABLES

Wholesale selling price:

Artichokes, Northern, doz.	90@1.00
Beets, doz.	30@35
Beans, String	3@4
Lima	3@4½
Cabbage	75
Carrots, doz.	30@35
Cauliflower, doz.	1.25@1.35
Celery, doz.	50@60
Corn, Sugar, box	50@60
Field corn, sack	1.50@1.60
Cucumbers, lug	35@45
Pickling, lug	1.10@1.35
Egg Plant	4@5
Escarole, doz.	40
Horseradish, lb.	12
Leeks, doz.	35@40
Lettuce, crate	85
Mint, doz.	35@40
Okra, lb.	7@8
Onions, Green, doz. bunches	15@20
Oyster Plant	25@30
Parsnips, doz.	25@30
Peas, lb.	4@6
Peppers—	
Bell, lb.	5@6
Chili, lb.	2½@3
Radish, doz.	20@25
Rhubarb	80@1.25
Spinach, doz.	20
Squash—	
Summer, lug	30@35
Crookneck	25@35
Hubbard, lb.	2½@3
Turnips	30@35
Tomatoes, lug	35@50

FRESH FRUIT

Wholesale selling price:

Apples.	
Bellflowers	75@1.15
Gravensteins	75@1.10
Skinners' Seedlings	85@1.10
Crabapples	90@1.25
Bananas	3½@4
Berries—	
Strawberries, basket	3@4
Raspberries, basket	5@7
Blackberries, basket	3@4
Cantaloupes—	
Locals, small	1.00@1.25
Locals, large	1.65@1.75
Casabas, doz.	65@1.00
Figs, 1-layer box	65@1.75
Grapes—	
Concord, crate	1.25@1.35
Black, crate	1.35@1.50
Malagas, crate	90@1.10
Muscatels	75@85
Isabella, crate	1.00
Nectarines, lug	90@1.20
Peaches, lug	65@90
Pears, Bartlett, lug	1.10@1.25
Seckel	1.25@1.35
Burbanks	75
Pineapples, lb.	6@7
Plums, lug	90@1.35
Quinces	75@80
Watermelons, lb.	1@1½

CITRUS FRUIT

Wholesale selling price:

Lemons	4.50@8.25
Grapefruit, Seedless	2.25@2.50
Valencias	1.75@2.50
Limes, basket	1.50

DRIED FRUITS

Wholesale prices to retailers are:

Evaporated Apples, Fancy., lb. bxs.	7½@10½
Apricots	9¼@11
Nectarines	12½
Peaches	6½@7½
Pears	8@12
Prunes	6@17
Plums	10

NUTS

Prices named by California Walnut Growers' Association are:

No. 1	17½
Budded Walnuts	21
No. 1 Soft Shell Walnuts	16
No. 1 Hard Shell Walnuts	15½
No. Twos	11½

Wholesale price:

Almonds—	
I X L	22@23
N P U	21@21½
Drakes, Thin Shells	18@19
Pecans	16
Peanuts—	
California, Raw	6
Japan	7½
Eastern	7½
Pine Nuts	15@16
Rice Corn	5.00@5.25

HONEY

Wholesale selling price:

Comb, Fancy, Water White	15
White	13
Light Amber	12
Extr. Water White	8
White	7½
Light Amber	7
Beeswax	30

BEANS

Wholesale selling price:

Producer's price not far from one dollar under these quotations:

Limas	8.00@8.25
Lady Washington	5.60@5.70
Black Eyes	8.00@8.50
Pinks	5.75@5.85
Lentils	8.00@10.00
Small White	6.50@6.75
Garbanzos	8.00@8.50

RICE

Wholesale selling price:

California	5.00
Broken	4.00

HAY

Buying prices f. o. b. cars Los Angeles:

Barley	10.00@11.00
Wheat Hay	10.00@11.00
Tame Oat	11.00@13.00
Alfalfa	9.00@11.00

GRAIN

Wholesale selling prices f. o. b. Los Angeles:

Corn, Yellow	2.20
Corn, White	2.30
Wheat	2.00
Oats, Red	2.35
Oats, White	1.65
Kaffir Corn	1.90
Millet	3.75
Popcorn	4.75@5.00
Egyptian Corn	2.30
Barley Seed	1.45
Milo Maize	2.00
Cal. Seed Oats	2.25
Sunflower Seed	5.25@5.35

FEED STUFF

Wholesale selling prices f. o. b. Los Angeles:

Bran, Heavy	1.75
Alfalfa Meal	1.05
Alfalfa Syrup, per cwt.	1.05
Beef Scraps	3.00@3.10
Beet Pulp	1.25
Cracked Corn, cwt.	2.20
Cracked Wheat, cwt.	2.15
Cotton Seed Meal	1.85
Blood Meal	3.60@3.70
Bone Meal	2.00@2.10
Bone Green	1.95@2.05
Charcoal	1.90@2.00
Cracked Wheat, cwt.	2.10
Oil Cake Meal	2.05
Fish Meal	3.15@3.25
Rolled Oats	1.70
Rolled Barley	1.30
Middlings	2.00
Oat and Wheat Middlings	1.55

San Francisco Market

SAN FRANCISCO, Aug. 25, 1914.

The prices given below, except where otherwise noted, are those made by wholesale or commission houses to retailers, and are intended to oive producers the range of the market rather than an indication of prices which they will secure. Jobbers' quotations to producers are not given.

BUTTER

Extra butter is slightly off in quotation, but the trade predicts quick recovery. Prime firsts are now quoted equally high with extras.

Prices to trade 4 cents above following quotations:

Extras	27
Prime Firsts	27
Firsts	25
Seconds	22

CHEESE

Wholesaler to retailer.

California Y, America	14½@15½
California Flats	11@14
Cheddar	20
Oregon Twins	15¼

EGGS AND POULTRY

A slight advance noted in most grades of eggs notwithstanding Pacific Mail liner brought 16,000 dozen on Monday, and this shipment was reported in best condition of any yet received from the Orient. The trade is taking them at 18 and 20 cents per dozen. Some have been reshipped as far as San Diego.

Prices to trade 3 cents higher than following quotations:

Extras	34½
Firsts	30
Select Pullets, lb.	27½
Storage	30
Hens	15@18
Fryers	20@21
Roosters, old	12
Roosters, young	22@23
Broilers	18@20
Belgian Hares, lb.	10@13

LIVE STOCK

San Francisco prices, gross weight:

Steers	4@7
Cows and Heifers	3@6¼
Calves, lb., live weight	6@9
Hogs	9@9¾
Wethers	5@5½
Ewes	4½@5
Milk Lambs	6½@6¾

POTATOES

Wholesale selling price:

Delta, Burbanks	75@1.00
New Potatoes, lb.	1@1¼
Sweets, lb	1½@2

ONIONS

Wholesale selling price:

Yellow, sack	70@90
Garlic, new	12½@15

VEGETABLES

Wholesale selling price:

Beans—	
Limas, lb.	5@6
Wax, lb.	1@2½
Strings	1@2½
Cabbage, cwt.	1.00@1.25
Carrots, sack	35@50
Corn, Green, sack	75@1.00
Cucumbers, lug	15@25
Egg Plant, lug	35@50
Peas, lb.	3@3½
Peppers—	
Bell, lug	25@40
Chili, lug	25@35
Rhubarb, box	60@1.00
Tomatoes, lug	30@50

FRESH FRUIT

Wholesale selling price:

Apples—	
Alexander	50@75
Gravensteins	50@75
Bellflowers	75@90
Crabapples	30@85
Blackberries, chest	75@1.75
Bananas, Hawaiian, bunch	1.25@1.75
Cantaloupes, crate	30@65
Ponies	30@35
Delta, lug	10@25
Casabas	50@75
Figs—	
Black, double layer	65@85
White, box, single layer	40@65
Grapes—	
Black	25@50
Tokay	50@75
Seedless	40@60
Malagas	45@60
Muscats	40@60
Huckleberries, lb.	8@12½
Nectarines, crate	75@1.00
Peaches, crate	25@85
Lugs	40@60
Pears, box	65@1.00
Large, wrapped	1.00@1.25
Canners	17.00@25.00
Plums, crate	40@80
Lug	75@1.25
Pineapples, Hawaiian, doz.	1.50@2.00
Prunes, crate	60@1.00
Quinces, box	50@75
Blackberries, chest	1.50@3.50
Huckleberries, lb.	7@12
Raspberries, chest	7.00@8.00
Strawberries, chest	1.50@3.00
Watermelons, doz.	75@1.50

WEATHER CONDITIONS

For week ending Saturday, August 22, 1914.

Report from the various stations of the U. S. Weather Bureau, by Geo. H. Wilson, director, San Francisco:

	Rainfall Data			Temperature Data.	
	Past Week.	Seasonal to Date.	Normal to Date.	Maximum.	Minimum.
Eureka	.00	.01	.15	62	48
Red Bluff	.00	.00	.00	98	56
Sacramento	.00	.00	.00	94	54
San Francisco	.00	.02	.01	68	52
San Jose	.00	.00	.03	86	48
Fresno	.00	T	.00	106	58
Independence	.00	.06	.00	98	52
San Luis Obispo	.00	.00	.03	90	50
Los Angeles	.00	.01	.00	88	56
San Diego	.00	.00	.00	78	60

T means trace.

CITRUS FRUIT

Wholesale selling price:

Grapefruit, Seedless	1.00@2.50
Lemons	6.50@9.00
Lemonettes	5.00@6.50
Limes, cs.	4.25@4.50
Valencias	1.75@2.50

DRIED FRUITS

Wholesale prices are:

Prunes—1913 crop, bulk basis: 30s-40s, 7c; 40-50s, 7c; 50-60s, 7c; 60-70s, 7c; 70-80s, 7c; 80-90s, 5¾c; 90-100s, 5½c. The above are for both Santa Clara and outside; 1912 crop worth practically as much as the new crop: 20-30s, 15c in 25-lb. boxes.

Other Fruits. 50-lb. Boxes—	Standard	Ch.	Extra Ch.	Fcy.
Evap. Apples	....	9 c	9½c	10c
Peaches	....	5 c	5¼	6c
Pears	8½c	9 c	10 c	....

RAISINS

The following prices are f. o. b. Fresno, as given out by the Associated Raisin Company On and after August 8, 1914, the price of 1-crown loose Muscatels, in 50-pound boxes, will be as follows: 1912 crop, 4½ cents; 1913 crop, 4¾ cents. Seeded, fancy, 16-oz. pkgs, 7½c; do. 12-oz., 6c; do. bulk, 6¾c; do, choice, 16-oz., 7c, do, 12-oz., 5¾c; do, bulk, 6½c; Sultanas, no stock; Thompson Seedless, unbleached, 50s, 6c; 16-oz., 7⅛c; 12-oz., 5&c; recleaned, ¼c advance; do, floated, ½c advance; London Layers, no stock. Local representatives of the Association are asking ¼c higher, while several of the large packers are quoting ⅛c under the Association's figures.

NUTS

Wholesale selling price:

Peanuts—	
Unpolished	5@6
Polished	6@6½
Japanese, Shelled	6¼@6¾
Italian Chestnuts	6½@7

BEANS

Wholesale selling price:

Limas	7.50
Pink	4.50@4.75
Black Eyes	6.25@6.50
Cranberry	5.50@5.75
Small white	5.50@6.00
Garbanzos	5.00@5.50
Large white	4.75@5.00
Bayou	5.00@5.50
Manchurian Speckled Bayous	4.40@4.60
Manchurian Butters	4.60@4.80
Manchurian Cranberry	4.00@4.25
Red Mexican	5.25
Horse Beans	1.90@2.00

HONEY

Comb, Water White	14@16
Amber	10@12
Dark	7@10
Extracted White	7@9
Light Amber	6½
Dark	4@5½
Beeswax	27@32

HOPS

1913

Sacramento Valley	14@15
Sonoma-Mendocino	15@16
Oregon Clusters	14½@16
1914 Contracts	15@16

HAY

Under date of August 21 Scott, Magner & Miller say:

Receipts of hay for the past week were 4797 tons. A few cars of fancy wheat hay arrived which were placed without trouble, but the great majority moves slowly and at very unsatisfactory prices. Sellers are forced to make concessions to place consignments. Most consumers show no inclination as yet to fill up for winter use, and are only buying as they need it. Third cutting alfalfa is arriving from the river, and is showing up as a rule much better in quality than the second.

Fancy Wheat Hay, lt. bales	11.00@12.00
No. 1 Wheat or Wheat and Oat	8.00@9.00
No. 2 Wheat or Wheat and Oat	6.00@7.50
Choice Tame Oat	10.00@11.00
Other Tame Oat	7.00@9.00
Barley	6.00@8.00
Wild Oat	6.00@8.00
Alfalfa	6.00@9.00
Stock Hay	4.50@5.00
Straw, new	40@45

GRAIN

Wheat, Cal. Club	1.57½@1.60
Corn, Eastern Yellow, blk.	1.90@1.91¼
Egyptian. White Corn	1.70@1.72½
Barley, Feed	1.00@1.01¼
Shipping and Brewing	1.02½@1.05
Oats, white	1.22½@1.25
Oats, red	1.15@1.25
Millet	2¾@3
Flaxseed, lb.	4½@5
Mustard, Brown	4@4¼
Rye	1.50@1.55
Sunflower	5@5½

FEED STUFF

Alfalfa Meal, car lots	11.50@12.50
Bran, ton	27.00@28.00
Feed Cornmeal, ton	42.00
Cracked Corn	41.50@42.00
Rolled Barley, ton	21.50@22.50
Rolled Oats, ton	37.00@37.50
Middlings	32.00@34.00
Shorts	28.00@30.00
Oilcake Meal	32.00@33.50
Cocoanut Oilcake Meal	25.00@26.00
Linseed Oilcake Meal	27.00@28.00

Deciduous Fruit Market

Since our last bulletin a general European war is in progress, and the result of it is a general state of uncertainty as to future conditions. Whether it will or will not have any effect upon California dried fruits is a question at the present time that no one can accurately answer. We are giving the matter a good deal of thought, but, like everyone else, cannot predict the outcome, as nothing like this war has ever occurred.

The subject is very broad, and we are apt to drift along, anxiously waiting for something to happen one way or another; it may be a slump or it may be a strongly advanced market, but all depends on whether goods bought for export can safely reach their destination and be paid for, and whether the European crop can be harvested. As far as export business is concerned everything is at a standstill and everyone awaiting the result. In the course of a few days we believe that we will be able to learn something definite.

The F.O.B. coast market has an easy undertone. Very few apricot shipments are being made, but there is no export demand. The market is quiet on peaches, but some sales are being made. The financial situation in some of the large Eastern cities, induced by the European disturbance, has begun to have a severe effect on the wholesale grocery trade, as the banks are sitting tight on what money they have and are refusing credit, except in extreme instances. This has necessitated many of the dried fruit buyers staying out of future dried fruits until the situation clears. Purchases to date have been light, and the present situation means that buying will be deferred to a later date.

The action of our government will undoubtedly relieve the tension somewhat, as we notice that a statement by the controller of the currency says that the financial condition of this country is improving and that banks will be in a position to meet all reasonable requirements. The controller states that shipments of additional currency are being distributed over the country, which will go into immediate use, so we hope that business will resume its normal condition.

We have been informed that some of the dried fruit packers have refused to accept delivery from the growers for export shipment. It is a hard thing for a grower to determine whether his fruit is going to be used for domestic or export use, and on this account an effort may be made to beat down the price. We hope that growers will not get frightened and start to unload at prices they may be sorry for later, and which are below the cost of production. We realize for our members as good prices as they can obtain elsewhere, and by holding together we may be able to prevent the market becoming demoralized.

Apricots are practically all dried.

Peaches are now going on the trays as fast as possible, and deliveries will soon commence and it is more than likely that an effort will be made to bear the price, so we would impress on growers the necessity of not disposing of their peaches unless they are able to realize a fairly good living price. Quotations as low as 3¼ cents base, choice, by short-sellers have been made the last few days, but we hope growers outside the Exchange will not furnish fruit to bear the market. Speculators who have sold at low prices must buy fruit to fill orders, and if not able to buy at prices which show a profit they will be compelled to buy at an advance.

The Exchange is not trying to hold prices up to a point that prohibits consumption, but is endeavoring to get a price that will show the grower a living profit. Exchange members realize that co-operation is the only method of protection for the dried fruit grower. The Exchange is growing stronger and becoming a bigger factor every day in the dried fruit world, so we would urge growers to join and help along its work.

Prune picking and dipping is commencing, so we would ask our members to make deliveries as soon as possible, as orders must be filled and be shipped right on time to avoid giving buyers a chance to complain. Our reputation is at stake, and no effort must be lacking to build us up and strengthen ourselves, so do not wait to deliver your crop until you are all through drying, but deliver it from time to time, as fast as you get it ready.

After September 1st the offices of the California Cured Fruit Exchange will be located at 417 Market street, San Francisco.—California Cured Fruit Exchange, Sacramento, Aug. 10.

CALIFORNIA ALMOND GROWERS' ESTIMATE OF THE COMING CROP

Below we give an estimate of the California almond crop, which has been prepared after careful investigation:

Nonpareil

This variety will be much lighter than last season.

IXL.

These trees are always shy bearers and the total production in any year is small in tonnage. This variety will be about the same in quantity as last season.

Ne Plus.

This variety will exceed the production of last season by about 10 per cent.

As a whole, the above three Hatch varieties will not exceed the production of last season.

Drakes.

This variety will exceed last year's tonnage about 25 per cent.

Languedoc.

This variety will be about the same as heretofore. Last year we had about one-third of a normal crop. This year we estimate we will have not to exceed one-half of a normal crop. In the beginning there was a heavy setting of buds on the trees in all sections, but it seems that the trees did not have sufficient vitality, owing to the past two years of drouth, to mature the crop. The total crop last season was approximately 1150 tons. This year we estimate the tonnage from 1500 to 1600 tons. Of this the Exchange expects to handle 1200 to 1300 tons.

Quality.

Will be unusually good.

Prices.

Unless unforeseen conditions prevent, prices will be in our hands on September 1st.

Citrus Fruit Market

LOS ANGELES, Aug. 26, 1914.

Last week's shipments were extremely heavy, aggregating 338 cars as against 91 cars last year this date, 188 cars the preceding year, and 137 cars in 1911. Without question the present week's shipment will be lighter. This, together with the immense receipts in the eastern markets of watermelons, peaches and a few apples, makes a serious condition. However, prices are about the same as they have been in preceding years at this same date. August 10 to September 10 is considered the worst month for oranges of the 12. Mr. King of the Fruit Growers' Exchange is just back from a trip through the Northwest, including several hundred miles in western Canada, and reports orange market conditions seriously affected, not only by the season, but by war conditions. The lemon market is also in a most unsettled condition; the stopping of Mediterranean shipments for a time gave a speculative condition, and dealers buying some lemons at seven and eight dollars, which are long prices, boosted prices to $11 and $12. At the present time there are 60,000 boxes of foreign lemons afloat. They will reach New York in a short time, and this adds an element of uncertainty to the abnormal lemon conditions.

Shipments.

Shipments of oranges to date since November 1, 1914, 35,400 cars; lemons, 2,639; total, 38,042. To same date last season, oranges, 12,701; lemons, 2,008; total, 14,715. Total shipments of all citrus fruits two years ago this date, 33,176.

NEW YORK, Aug. 24.—Twenty-two cars Valencias, one car mixed Valencia and grapefruit sold. Market slightly higher in some instances. Weather fair.

VALENCIAS—	Avge.
Dos Palmas, San Marino G.	$2.20
El Toreador. San Marino G.	1.65
Aurora, Amer. Ft. Dis.	3.55
Aurora, fy., Amer. Ft. Dis.	3.05
Sapho, Amer. Ft. Dis.	2.50
Titus Ranch, Bradbury Estate	2.35
Pronto	1.85
Scepter, Or. Ex.	3.60
Rooster, Or. Ex.	2.95
Mohawk, Or. Ex.	2.65
Charter Oak, S. D. Ex.	3.30
Red Ridinghood, S. D. Ex.	2.40
Iva	1.70
Golden Cross, O. K. Ex.	2.65
Red X.	2.00
Pet. S.D. Ex.	2.60
Glendora Heights, Foothill	2.75
Kenilworth, A.H. Ex.	2.85
Kenilworth. A.H. Ex.	2.55
Peasant, A.H. Ex.	2.25
Dandy, A.H. Ex.	2.00
Dandy T	1.70
Echo, S.T. Pasadena	2.65
Arroyo, S.T. Pasadena	2.25
Geo. Washington, Or., Tustin	2.80
Carmencita, S.T. Ex.	2.70
Colombo, S.T. Ex.	2.35
Alhambra, S.T. Alhambra	2.50
Glendora Heights, Foothill	2.40
Evolution, A.C.G. Ex.	2.30
Altura, S.B. Ex.	2.35
Viking, S.B. Ex.	2.05
Vanity, S.B. Ex.	2.00
Swastika, L.V.W. Brown	2.25
Modjeska, xf.	3.30
Modjeska, fy.	3.10
Bell	2.55
Golden Orchard, Ind. Ft. Co.	2.00
Freedom, Ind. Ft. Co.	1.85
Mayflower, Stewart Ft. Co.	3.05
Pilgrim, Stewart Ft. Co.	2.60
Buena, Stewart Ft. Co.	2.15
Taylor's Best	2.60
Taylor's Pride	1.75
Mt. of Olives, Growers Ft. Co.	2.80
Olive Heights, Growers Ft. Co.	2.50
Angeles, Growers Ft. Co.	2.25
Old Mission, Chapman	2.80
Golden Eagle, Chapman	2.15
Naralimo, Sparr Ft. Co.	2.35
Circus, Sparr Ft. Co.	2.15
GRAPEFRUIT—	
Squirrel, seedless	$1.75
Prairie Chicken, seedless	1.30
Peasant, seedless	1.20
GRAPEFRUIT—HALVES—	
Squirrel	$1.05
Palm Tree	.90
Mahala (brown boxes)	1.70
Mahala, (white boxes)	1.15

PITTSBURGH, Aug. 24.—four cars oranges sold. Rainy.

VALENCIAS—	Avge.
Naralimo, Sparr Ft. Co.	$1.70
Circus, Sparr Ft. Co.	1.90
El Capitan, S.D. San Dimas	2.30
Pico, S.T. Whittier	2.05
Iris, D.M. Monrovia	3.10
Violet, D.M. Monrovia	2.90
Jasmine, D.M. Monrovia	2.45

CLEVELAND, Aug. 24.—Three cars Valencias sold. Market advancing on good quality Valencias. Cool, cloudy. One car Messina lemons averaged $3.85.

VALENCIAS—	Avge.
Campfire, S.T. Nordhoff	$2.05
La Habra, S.T. La Habra	3.00
Reliable, S.T. La Habra	2.60
Sapho, Amer. Ft. Dis.	2.00
Jupiter, Amer. Ft. Dis.	1.35

PHILADELPHIA, Aug. 24.—Eight cars sold. Market is unchanged.

VALENCIAS—	Avge.
Apex, O.K. Upland	$2.35
Majesty, O.K. Upland	2.25
Pico, S.T. Whittier	2.35
Maltese, D.M. Ex.	2.35
Anoakia, D.M. Ex.	1.95
Colombo, S.T. Fullerton	2.45
Las Palmas, S.T. Fullerton	2.00
Carmencita, S.T. Fullerton	1.40
Mt. of Olives, Growers Ft. Co.	2.90
Mission Play, San Marino G.	2.60
Olive Heights, Growers Ft. Co.	2.50
Angeles, Growers Ft. Co.	2.35
El Molino, San Marino G.	2.35
Carnation, G. & Speich	2.25
Big Four	2.10
Rialto Brownie, Rialto Ft. Co.	1.80
Popular, G. & Speich	1.80
Rialto Boy, Rialto Ft. Co.	1.60

BOSTON, Aug. 24.—Seven cars oranges sold. Cloudy, muggy. Market is unchanged.

VALENCIAS—	Avge.
Airship, F.C. Fillmore	$2.55
Sunnyheights, R.H. Red	2.25
Pala Bells, R.H. Redlands	2.40
Pearl, R.H. Red	1.55
Alhambra, S.T. Alhambra	2.45
Whittier, S.T. Whittier	2.65
Quality, S.T. Nordhoff	2.50
Campfire, S.T. Nordhoff	1.80
Glendora Home, A.C.G. Ex.	2.40
Hunter, A.C.G. Ex.	1.55
Brownie, Rialto Ft. Co.	2.45
Boy, Rialto Ft. Co.	1.90
GRAPEFRUIT—	Avge.
Glendora Home, seedling	$1.55

CHICAGO, Aug. 24.—New apples, 2.00@4.00 per barrel. Lemons, California, 7.00@8.00 per box. Oranges, 2.75@3.25. Pineapples, per crate, 1.50@3.50. Peaches, 2.00@2.25 per case, 12½@25 per one-fifth bushel basket. Pears, 75@1.25 per bushel. Lima beans, 25@30 per quart. Onions, 75@1.60 per sack. Peppers, 30@1.00 per tomato box.

ST. LOUIS, Aug. 24.—Warm, raining. Market is easier. Five cars Valencias sold.

VALENCIAS—	Avge.
Prairie Chicken, A.H. Arl	$1.65
Spanish Girl, A.H. Arl	1.35
El Capitan, S.D. San Dimas	2.15
Titus	2.35
Cambria, Placentia, M.O.A.	1.55
Brownie, Rialto Ft. Co.	1.95
Rialto Boy, Rialto Ft. Co.	1.65

CINCINNATI, Aug. 24.—Hot. Three cars Valencias sold. Market is declining.

VALENCIAS—	Avge.
Hawk, S.A. Pomona	$2.05
Carmencita, S.T. Placentia	2.45
Colombo, S.T. Placentia	2.00
Las Palmas, S.T. Placentia	1.45
Celebrity, Foothill Val. G.	2.10

WHAT GOLD CANNOT BUY

Gold is all you care for—it will buy the rest? You are rich—and, therfore, doubtless you know best! "All men yield to money, everything's for sale; gold means milk and honey all along the trail?

"Mighty is its power and men hold it high?" Can it coax a shower from the cloudless sky? Can it bring the playtime of your youth again? Can it keep the Maytime for the joy of men?

"Gold is splendid plunder, life's most treasured prize?" Can it buy the wonder of my true love's eyes—buy a spirit which is faithful, fond and sure? No? Oh, man of riches, you are very poor!—Berton Braley, in Dallas Dispatch.

ALMOST

There's almost as much pleasure in giving away something you don't want as there is in getting something you do want.

The only crime in making a mistake is making the same one twice.

PHYLLOXERA

(Continued from Page 199.)

scientists of France concluded there must be some vines in the native home of the insect that could withstand its attack. They argued that unless it changed its food the parasite would sooner or later destroy all the host plants and so commit race suicide. They set themselves the important task of investigating this problem and if possible discovering a remedy. Subsidized by the French government a commission of the very best available men was sent out to study the question in the habitat of the insect. The result was the discovery of resistant varieties of American vines, some of which, with their selected hybrids, are now being utilized in the struggle against phylloxera.

No vines are actually proof against phylloxera, but some can resist its attacks. The roots of such as possess a high resistance are hardier and protected with stouter coverings through which the proboscides of these dreadful little parasites cannot readily penetrate. Thus their food supply is restricted, and a consequent limit is placed on their multiplication such as does not take place on the roots of the ordinary European vine. In the truly resistant vine, too, the injured bark is excoriated, no mortification of the tissues takes place, and consequently the root itself sustains no perceptible damage. The task of the parasite under such circumstances resembles that of the mythical Sisyphus, who was condemned to roll up-hill an ever-returning boulder.

The insect and its host plant, the American vine, have been brought up together during centuries. Plants deficient in the natural protection speedily succumbed. The more robust and better protected were the best equipped to carry on the struggle. They survived. The different species were perpetuated by seed. Those seedlings that possessed sufficient resistance were allowed to remain. Those deficient in their resistant qualities were speedily weeded out by an inexorable law of nature, aided by the voracious phylloxera. The test was a remarkably severe one. In this way a high standard of resistance was secured, and the immunity thus obtained has been utilized by the vigneron who has found it to be the salvation of the viticultural industry.

NURSERY CATALOG

As first thought it seems a little out of season for nursery catalogs, though we are not certain but this is about the best time of the year to start next year's planting. In any case Mr. Frank Wilson and Mr. Charles Chambers of the Fresno Nursery Company are out with the goods, or at least making a showing as to the kind of goods which they will offer next season and we wish to say that the catalog and the accompanying price list, which were used to show the goods, are magnificent publications. The catalog consists of over 50 pages, on plate paper, and gives not only list, illustrations and description of plants and trees, but also a great fund of information as to time of planting, etc. The book is well worth the asking for, at least for one reason, and that is to note the changed expression of the man on the cover who has purchased "Reliable nursery stock from the roots up."

WHEAT
for Chicken Feed

We have several cars of small grain wheat, clean, sound and sweet. For a short time we offer it at the following prices:

Less than ton lots, $1.75 per 100 lbs.
Ton lots, $34.00 per ton.
Prices, f.o.b. cars Los Angeles.
Special price by the carload.
Sample on request.

West Coast Seed House
116-118 E. 7th St. Los Angeles, California

Perfection in Moldboard Plowing

A Strictly One Man Outfit

Why not cut your costs in Half.
Equal to Eight Horses.
Throw a furrow against the fence.
Back into the corners.
Farm work made a profitable pleasure by the use of the

EASILY HANDLED
LIGHT WEIGHT
GUARANTEED

"STEEL KING" MOTOR PLOW

$1050.00 F. O. B. Los Angeles

Sterling C. Lines
PACIFIC COAST DISTRIBUTOR
500 E. Third Street
Los Angeles, Cal.
Home Phone F4665

PUMPS

Whatever kind of a pump you need—we have it. Handling all styles of pumps we are not obliged to urge any one type on you, but are in a position to help you select the pump best adapted to your particular requirements. We manufacture and sell

Horizontal Centrifugal Pumps
Vertical Centrifugal Pumps
Deep Well Pumps, Power Heads
Windmill Pumps, House Pumps

Illustrated are three of the many different styles. Don't decide on a pump till you put your needs up to our Pump Specialists. Their advice and suggestions will cost you nothing.

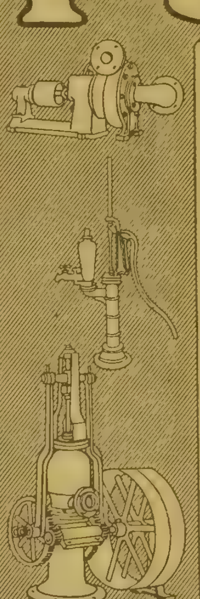
WRITE TO US and state your requirements—by guiding you to a right selection we can probably save you both money and trouble.

FREE CATALOG 28-B describes Bean Horizontal and Vertical Centrifugal Pumps.

FREE CATALOG 28-D describes all other pumps; also Bean Distillate Engines.

A postal will bring either or both by return mail.

BEAN SPRAY PUMP CO.
212 West Julian St. San Jose, Cal.



Krogh Pumps

Reliable — efficient — economical — built for the best wells. 35 years as leaders. Booklet 78B about Horizontals and Verticals — and 82B about motor-driven pumps—are free.

Krogh Mfg. Co.
San Francisco - Los Angeles.

Mr. Brigham of Long Beach bought 80 acres of Milford Land

Read this letter to his friend J. J. Brown of Long Beach

The following letter is unsolicited praise about the Milford Valley irrigated lands from a recent purchaser. The letter rings with frankness and truth. It is a calm, unbiased description of conditions as they exist today in Milford Valley.

Milford, Utah, Aug. 5th, 1914.

Mr. J. J. Brown
532 Esther St., Long Beach, Cal.

Dear Mr. Brown:

I arrived here day before yesterday and there was already a party of ten Imperial Valley farmers, with one man from Ventura and two from San Dimas, and I had the advantage of their judgment.

Milford lies in a valley surrounded by mountains on the Salt Lake railroad and the town has about 1700 or 1800 people. The railroad company has shops here and employs a good number of men. Surrounding Milford valley is quite an extensive mining district and an extremely large range of cattle and sheep. I am informed that there are about a million and a half sheep and in the neighborhood of 200,000 cattle on it. This alone should provide a good market for everything the farmer can raise. There are only 15,000 acres watered by the project, with little likelihood of any more being added.

The irrigation system which I visited yesterday consists of a dam with a concrete core 70 feet high, 350 feet thick and 1500 feet long, being built in a gap in the mountain, and am informed that it holds 27,000 acre feet. It is built in the strongest way that I could imagine a dam being built. The land watered by the system lies from 1½ to 8 miles south of Milford and is composed of a red limestone loam. Wells dug forty feet show only soil all the way. In my opinion the land is as good as Colorado or California, and I do not know of any more healthy place than this. The drinking water is found at a depth of about 40 to 60 feet and is clear and cold. The irrigation system provides clear, pure water for the irrigation.

I visited Minerville, which lies directly south of the land and which has been under cultivation for forty years, and I saw as good alfalfa fields as I have ever seen. I would think it safe to figure six tons to the acre for alfalfa. Oats should go nearly 100 bushels to the acre. Wheat would run from 40 to 60 bushels.

The trees are breaking down with apples and I saw pear trees that would grow 5 boxes to the tree. I saw the best plum trees that I ever saw, cherries both sweet and sour, all kinds of berries and as good gardens as you ever saw in California.

This land at $30 an acre I am morally sure will not be worth less than $200 to $250 inside of two or three years, and I bought 80 acres and have asked them to hold the 160 adjoining me until you can come up and see it.

They tell me they have an exsursion coming up about Saturday and if you could possibly come on that excursion I would advise you to do it.

Yours very truly,
CHAS. A. BRIGHAM.

$30 an Acre Adjoining Milford, Southern Utah, on Main Line of Salt Lake Railroad.

Under Gravity Irrigation System

Water Right $70 Per Share—12 Years Time to Pay for It If You Wish

Special excursions at low homeseekers' rates from Los Angeles Wednesdays and Saturdays. Write or call for illustrated booklet.

WESTERN SECURITIES COMPANY, 710 Hollingsworth Bldg., Los Angeles

KT IRRIGATION SYSTEM

Saves Water, Land and Labor

This system is not a theory or an experiment—but the result of a life-time of actual experience on the part of practical ranchers. It provides for a perfect distribution of the water at the exact spot required and at just the time it is needed

If you are a present or prospective irrigator, you cannot afford to overlook the "K T" System. Write today for the Eighth Edition of our Brown Book on Irrigation, which describes the "K T" System in detail; also ask for any specific information on the subject you may require.

KELLAR-THOMASON CO.
"Originators of the Valve System of Irrigating"
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".Ask your Dealer or Contractor".

READ-MILLER Co.

UNIVERSITY OF
8 SEP 1914

THE AUTO ON THE FARM

CALIFORNIA CULTIVATOR

Rural Californian combined with California Cultivator

An Illustrated Weekly Magazine, Devoted to the Rural Home and Ranch

LOS ANGELES September 3, 1914 SAN FRANCISCO

Hundreds of Miles of Such Roads in California

No place in the world offers more attractive mountain and seashore drives than does California. No farmer markets his produce over better roads than does the California farmer. And the biggest factor in placing on the market fruits and other products is the automobile. Proportionate to its population no section of the country equals California in the number of machines owned.

Studebaker

The Report Is True—Here Are The Prices

UNDOUBTEDLY—along with the whole country—you have been amazed at the prices for the new Studebaker cars—$985 for a big, roomy touring car and $1385 for a Studebaker "Six."

These would be extraordinary prices for just a "good" car.

What, then, can be said of these prices for a Studebaker car?

What, then, can be said of these prices when they carry with them the Studebaker name, the Studebaker reputation, the Studebaker character, the Studebaker guarantee—and Studebaker Quality?

It is too little to say they are extraordinary.

We believe these prices with Studebaker Quality are unprecedented.

Our fathers and grandfathers know the name Studebaker. For sixty-two years it has meant American vehicles, honestly, sturdily made. For sixty-two years farm and city homes have known Studebaker as the name for dollar-for-dollar value.

These sixty-two years Studebaker has grown enormously—in reputation, in production, in prosperity.

Today Studebaker means—in city and country—the acme of elegance as well as the acme of money-worth.

Today we give Studebaker owners and Studebaker buyers the benefit of sixty-five years of Studebaker growth.

That growth has made possible Studebaker Quality at Studebaker prices—and has made them possible for these reasons:

First, there is the huge volume of Studebaker production.

During the last eighteen months 55,000 Studebaker cars have been manufactured and sold.

This is the largest number of cars of one make, selling at or above the Studebaker price, ever produced in the same period by any manufacturer.

Second, Studebaker cars are manufactured cars—manufactured in the Studebaker plants.

Studebaker motors, springs, bodies, tops, drop forgings are made in Studebaker plants.

Special formulae for Studebaker steels are worked out and the steels are tested and analyzed in Studebaker laboratories, probably the largest and most completely equipped in the motor car industry.

Studebaker gears, axle-shafts, front axles, all vital parts are manufactured and heat-treated in Studebaker plants.

Studebaker, we believe, manufactures a larger proportion of motor car parts than does any other motor car producer in this country.

The completeness of Studebaker manufacture of Studebaker cars means better, stronger, longer-wearing materials — consequently Studebaker Quality.

But in addition, it means the saving of the parts-maker's profit, the waste and extravagance of the "assembled" or semi-manufactured car.

And that, in turn, means the economies that make possible Studebaker prices.

The volume of Studebaker production and the completeness of Studebaker manufacture mean the Quality and the Profit that go back into the Studebaker car you buy.

The Studebaker has the double distinction—Unique in Quality and Unique in Price.

The Studebaker Car of 1915 is an impressive example of what square-dealing, good building and right-thinking among the American people can do in sixty-five years.

Today the American people in town and country "Buy it Because It's a Studebaker."

The Studebaker Corporation of America

112 Piquette Ave., Detroit, Mich.

Specifications

The New SIX—5-Passenger and 7-Passenger

Electric Starter, Electric Lights.
Two body styles: Five-Passenger and Seven-Passenger Touring.
Wheelbase—121 inches.
Long-Stroke (5-inch), Small-Bore 3½-inch) Motor; Six Cylinders, en Bloc.
Special Dimming Headlights.
Smokeless, Non-Leaking Lubrication System.
New Exhaust-Silencing Muffler.
Annular Piston Rings.
Cellular Radiator.
Crowned Fenders.
15 x 2½ in. brakes.
34 x 4-in. Goodrich Tires on Q. D. Demountable Rims: Safety Tread on Rear.
Extra Rim and Locking Tire Carrier.
Roomier Front and Rear Compartments.
Continuous Aluminum Footboard.
One-Man Type Top.
Built-in Rain and Clear Vision Ventilating Windshield, Attaching Rigidly to Top.
Scientific Anti-Rumble Gasoline Tank in Cowl.
Magnetic, Non-Leaking Gasoline Gauge, the only One Approved by Insurance Underwriters.
Full Floating Rear Axle, Shaft Locking into Taper at Hub. Timken Bearings.
Full Equipment of 13 Timken Roller Bearings.
Irreversible Steering Gear.
Inter-Locking Ignition and Lighting Switches.
20 Operations in Painting Bodies.

The New FOUR Roadster and Touring Car

Electric Starter, Electric Lights.
Two Body Styles: Five-Passenger Touring; Three-Passenger Roadster.
Wheelbase—108 inches.
Long-Stroke (5-inch), Small-Bore (3½-inch) Motor; Four Cylinders, en Bloc, Exhaust Manifold Cast Separate.
Smokeless, Non-Leaking Lubrication System.
Special Dimming Headlights.
Pressed Steel Push-Rods.
Annular Piston Rings.
Tubular Radiator with Auxiliary Water Tank.
Crowned Fenders.
12 x 2½-in. Brakes.
Hot-Jacketed Schebler Carburetor Bolted to Cylinders.
Magnetic, Non-Leaking Gasoline Gauge, the Only One Approved by Insurance Underwriters.
Generous Footroom in Both Compartments.
33 x 4 in. Goodrich Tires on Q. D. Demountable Rims; Safety Tread on Rear.
One-Man Type Top.
Built-in Rain and Clear Vision Ventilating Windshield, Attaching Rigidly to Top.
Full Floating Rear Axle, Shaft Locking into Taper at Hub. Timken Bearings.
Full Equipment of 13 Timken Roller Bearings.
Irreversible Steering Gear.
Flush Dash Equipment.
Extra Rim and Locking Tire Carrier.
20 Operations in Painting Bodies.

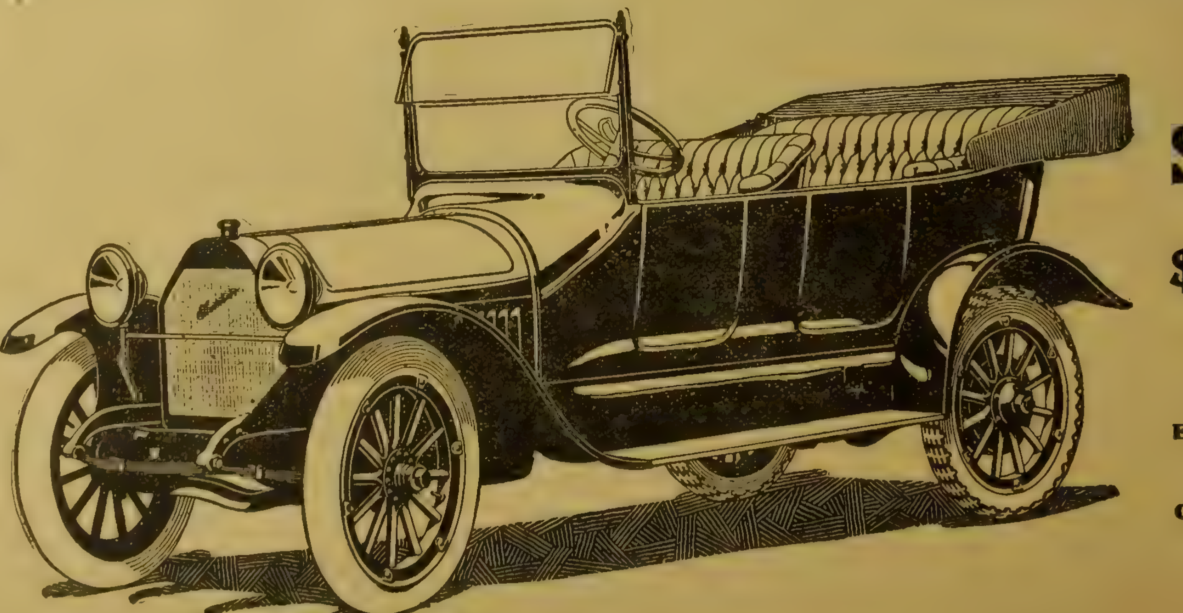
FOUR Touring Car

$985

(3-Passenger FOUR Roadster $985)

Electric Starter and Electric Lights

Extra Size Tires



SIX Five Passenger

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Vol. XLIII No. 10 LOS ANGELES: THURSDAY, SEPTEMBER 3, 1914 One Dollar Yearly

Can the Farmer Afford the Automobile?

Yankee-like Many Farmers Answer the Above With the Question; Can I Afford Not to Own One? It is Becoming One of Our Greatest Blessings from Social, Mental and Economic Standpoints.

I remember very well the feeling which came over me in barefoot days when an older brother had reached the age which justified him in owning a young colt, and as the colt and the brother both grew, the "breaking" gave pleasure to the whole family; and still later when the youngster had reached the earning stage I recall very well the joshes which we all gave him when he brought home a brand-new "piano box" buggy. One of the first rides I ever had in that "piano box" was on a Sunday night when a mischievous sister tucked me away under the seat as the big brother started off to see his "'steady." Every youngster in those days felt that he must have a nice little roadster which must never be desecrated by being put before the plow, and one of the discussions of the day was: "Can the young man afford such a nice rig?"

A little later the velocipede came to take up some attention, but still the side bar was a matter of practical use, while the velocipede would do for the circus parade and as a novelty. The ordinary small town boasted but one or two. But with the coming of the bicycle Young America took a wonderful forward step. Bicycle clubs were formed and membership in such a club meant entrance to "the best society." It was "the thing to do" to join the bicycle club, wear knee-breeches, ribbed wool stockings, blue coat with more or less braid, and, of course, complete the uniform with a military cap. No county fair, and finally not even the ordinary country fair, was complete without bursts of speed by bicycle riders and the parade around the track by the bicycle club, the club showing the greatest attendance winning certain cups and prizes.

It was my fortune to belong to the bicycle club instead of owning the "piano box" buggy, and believe me, our club was really somewhat noted. We had the fastest mile rider of all northern Ohio; we also had the slowest rider, for at the fair after the mile race was off came the slow race. This was 100 yards, the bicycles—the old-time 50 to 60 inch wheels—to keep between two lines some six or eight feet apart and to consume the greatest time in making that 100 yards. The bicycle was not to stop nor was the rider to fall off. Soon the bicycle club passed and the machine became the practical vehicle for working people.

Then came the horseless carriage. The first time I ever saw it was in a circus parade. The auto followed, and its club, which is still with us. Of course at first it took the same sporty lines, later reaching the practical work-a-day stage. There was talk of the organization of a commisson or a something which should put the "kibosh" on the farmer who was so reckless as to invest his hard-earned money in an auto. This came about because somebody discovered that the cost of living was increasing, and, of course, the farmer was responsible for the increase because he required the auto for the pleasure of his family.

The commission, we believe, was never organized, but certain bankers, especially in the Middle West, took it upon themselves to scrutinize very carefully the financial condition of the farmer who presumed to ride in a gasoline wagon, and we were told that many were refusing loans to such foolhardy people. It was the old question of the "piano box" buggy and "Can he afford it?" Of course nobody presumed to question the right of the commission man or of any middleman to own all the gasoline machines he wished.

Today this question of "Can he afford it?" is seldom brought up, though, of course, there are yet those who will deny the youngster the pleasure of the ownership of his horse, buggy or anything which is not strictly proven a profit bringer.

But really, has not the auto on the farm proven to be a profit bringer? There are many cases, we believe, where the young people have been made content with the farm and have remained at home, willing, strong workers, where the auto has given them some little insight into the life of the world outside the farm. Formerly the tired horses could not be used to take the family to town of an evening; even to put them on the road on Sunday after a week's work was cruel. Perhaps gasoline is no more willing than the faithful old horse, but one is not constrained to pity it, and consequently has much more pleasure from a good long drive.

But outside of the pleasure and mental and social profit of the auto, thousands of farmers are making it of practical use in the delivery of produce. The prophesied neglect of his business has failed to materialize. Of course there are farmers and farmers—and always will be. But where there is one who will allow one of his horses who happens to be a good stepper to lead him to the race track or amongst sporty people, there is now and then one who uses the auto because of the sporty element connected with it, but there are hundreds who own cars merely because of their practical value.

The horse breeder has looked with regret at the popularity of the auto, and without question the breeder of roadsters and fast horses has been put out of business, or nearly so, but where he has turned his attention to the drafter or to the cavalry type of horse, he is still making money, for horses were never at a higher price than they are today.

The growth of the automobile industry is greater than that of any other in the history of the world. We have before us a publication on the auto which bears the date of 1913, which refers to the wonderful growth of the motor vehicle industry and to the fact that "There are now over 800,000 motor vehicles in the leading countries of the world." From a daily paper of August 30, 1914, we take the statement that there are now in the United States alone 1,584,350, or nearly twice as many as were claimed for the world a year, or a little more, ago. The first six months of 1914 showed a gain of 294,485 in this country. A book which was published last year also refers to the fact that the world's manufacture of autos might aggregate for 1913 a grand total of 300,000 cars. Since August 1, a single manufacturer of autos in the United States has announced that he will produce before August, 1915, 300,000 cars from the one factory.

California has the greatest number of autos of any state in the Union in proportion to its population. The total registration at a recent date was 102,148. Of the various counties Los Angeles led with a registration of 35,132; San Francisco County came next with a registration of 9955; Alameda, third with 7091.

NECESSITY AND LUXURY

Written for the California Cultivator
By Chas. F. Collins, Horticultural Commissioner, Tulare County.

I consider the automobile both a necessity and a luxury to the farmer as well as to thousands engaged in various other lines of business. It is a necessity because it is an accessory which the business methods of the present day demand. It is a luxury because of the enjoyment it affords its owner and his family or friends during holidays and leisure hours. At the present prices of feed and gasoline no one can afford to keep a horse for driving purposes on roads that can be traveled by an auto. When the difference in cost of upkeep and time saved for the amount of work done is taken into consideration it is all in favor of the buzz wagon. Many of the lighter machines will travel almost any road worthy of the name in one-fourth the time required by the average horse and at less expense.

It enlarges the world for its owner. Before its advent the radius of the average farmer's activities and acquaintance did not exceed 10 miles, while now the confines of the largest county cannot bound it. Not only is his circle of acquaintances enlarged, but as a natural consequence his business ability is increased, which is necessary in order to meet the requirements of his largely increased business opportunities.

It is not and never was right to take old Dobbin from the plow for a hurried trip to town. The auto now obviates all necessity for this. Faithful old Dobbin can now plow as he should while some member of the family runs to town in the "machine" to exchange the butter and eggs for needed groceries or transact other necessary business.

"When the weary day is ended" and the evening meal is over, what is more soothing or rejuvenating than a spin in the cool twilight behind the horse whose muscles never tire. Then when business permits a holiday this faithful steed will between breakfast and lunch time transport its load of joy-seekers from the hot and dusty plains to the altitude of giant trees and babbling brooks.

The automobile demands good roads and it is largely owing to this fact that our public roads are improving each year by leaps and bounds. It would be a difficult matter indeed to transact the business of the world without it. It came because the methods of the age demand it and it has come to stay.

THE AUTO A TIME-SAVER

Written for the California Cultivator
By W. E. Premo, Porterville

The automobile I find absolutely essential in my case as I am giving three ranches more or less of my personal supervision. With the machine I am able to spend practically all of my time at the ranches during the working hours of the men without serious inconvenience to myself although I live in town and at a distance of 10 miles from two of the ranches and 20 miles from the other one. The time actuallly spent on the road is inconsequential when compared to the time required by a team for the "rounds" of the ranches. I can manage the ranches better by using a machine than I could one without.

I find that it costs about six cents per mile to run a light car over the average country road, considering first cost, upkeep and interest. It is my opinion that every rancher who employs a few men steadily and has a good sized investment should have a light car in his equipment for expediting business, but not for keeping him away from home.

Every rancher's home should be on his ranch, but if he lives in town the automobile is absolutely essential. On the other hand if he lives on the ranch the automobile is absolutely essential to the highest development of his family home life. Good roads and automombiles almost annihilate distance.

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Citrus and Tropical Fruits

FROST CONDITIONS AND INJURY TO CITRUS FRUITS

By Carl Nichols

The condition preceding frost in California is the passage of a low area from Idaho southward across Utah, thence westward into southern Nevada, and, finally, southward into southern California. For the most part, frosts are due to the movement of cold air from the northeast. Frosts also occur when a low area over southern California moves rapidly southwest and is followed by a high from northern California. Conversely, when the air moves from the sea inland, there is little danger from frost.

Under the above conditions, the usual warm lower air strata are vigorously displaced by cold dry air, and when drainage ceases, and the cold air settles during a period of comparative stillness, frost forms. A close agreement also exists between frost belts or frost streaks and areas of stagnant cold air.

Conditions Preceding Frost in Southern California.

The topography of southern California favors drainage of the air from the mountains seaward at certain hours, and a return movement of the surface air inland at certain hours. Thus conditions are highly favorable for the formation of air streams, which reverse their direction at least twice in each 24-hour period.

In general the lower air flows to the southwest during the night and early morning, and to the northeast during the afternoon. During the winter months when areas of high pressure pass over the Great Basin, the surface air apparently moves south, crossing the northern flank of the Sierra Madre and descending with some momentum into the Great Valley. The wind movement is particularly marked in the vicinity of mountain passes. During these so-called "northers" or "Santa Anas," the temperature rises and the humidity falls. The existence of a low pressure area south of the Colorado seems to intensify high north winds. The frosts are undoubtedly traceable to a displacement of the air in the valley, ordinarily warm, by air that is not so warm, although not cold. The descending mountain air is, however, remarkably dry, and, while dust laden, has little water vapor. When the wind lulls, which is apt to occur after sunset, the soil which in many places consists of river wash, coarse sand, gravel, or sandy loam, loses heat rapidly by radiation. During the morning hours, and before the return flow of air from the sea, with its moisture, can be effective, there has been a rapid fall of temperature. Under such conditions it is usual to have a fall in temperature from 50 degrees at 6 p. m. to 28 degrees by 6 a. m., with temperatures near the ground 4 degrees or 5 degrees lower.

Resistant Varieties of Citrus.

The trifoliate orange (Citrus Trifoliata) has been long known as perhaps the most resistant of all the citrus varieties, to cold. This is a small, bushy and very spiny tree, with trifoliate and deciduous leaves. The tree is easily recognized in the nursery because of its trifoliate leaves and also because it produces usually from two to four or more tap-roots. The tree is commonly used as an ornamental as far north as Philadelphia, and as a hedgeplant in the south. The fruit is small, smooth, with acrid, bitter pulp and a large number of seeds, and is therefore worthless for eating. The trifoliate orange is deciduous and ripens its fruit early in the fall before frost. It is about two or three weeks later than the sweet orange in coming into bloom, and is never caught by later frosts, while the early ripening of the tree in the fall allows the tree to become dormant much earlier than the common sweet orange.

Because of its hardiness the trifoliate orange has been used to a considerable extent as a stock for edible varieties in Florida and in the limited plantings of Texas. It is said that the stock imparts some of its hardiness to the scion. The exact cause of the greater resistance to cold of a tree budded on the trifoliate orange is probably due to the fact that the growth is not so vigorous and sappy and the general shape of the tree is closer and more compact.

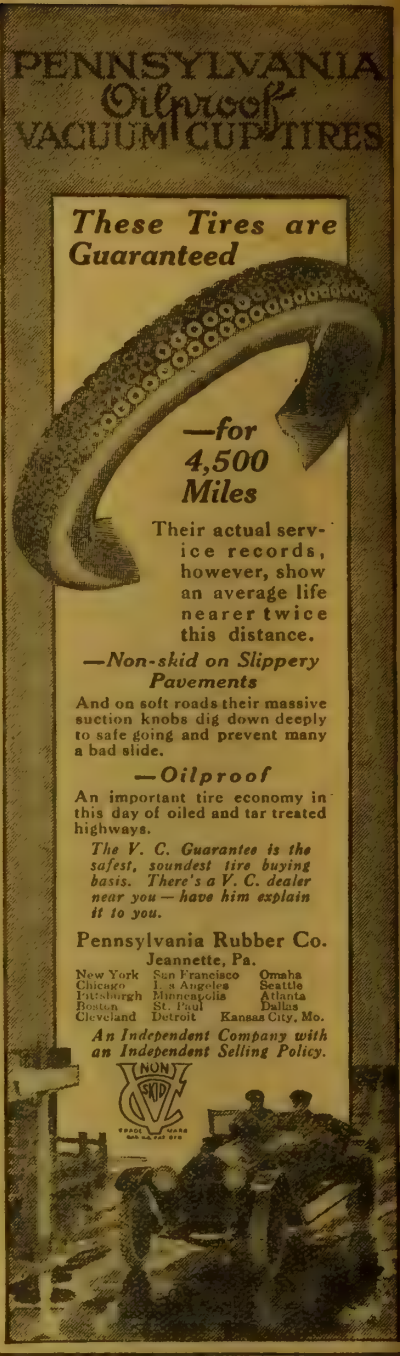
Of edible varieties of citrus, the Satsuma and the Kumquat seem to be considered more resistant to cold than most other varieties. Still in the great freeze in Florida where the temperature dropped as low as 14 degrees F., the trifoliate orange was the only one which escaped serious injury.

For California conditions the trifoliate orange should not be used. Orchards planted upon this stock have been pulled out. Moreover at the citrus experiment station at Riverside, Dr. J. E. Coit reports that trees budded upon this stock proved very little, if any, superior in resistance to cold.

Since the recent freeze in southern California, many conflicting statements have been given out as to the resistance of different varieties of oranges to cold. A. R. Tylor of the Whittier pathological laboratory reports that Tangerines and Mandarins are more resistant than Navels and Valencias, that Lisbon lemons are more resistant than Eurekas, that lemons are more hardy than limes and citrons, and that but little difference in hardiness could be found between full-grown Valencia and Navel orange trees.

Breeding Citrus for Frost Resistance.

In 1892-93, Webber and Swingle began the hybridization of various citrus varieties in Florida. These experiments were interrupted by the severe freezes of 1894-95 but were again taken up in 1896-97. One of the primary objects of this work was the securing of hardier varieties which would endure occasional freezes and which would be hardy enough to grow farther north than the usually recognized citrus belt. Many difficulties must be met in the hybridization of citrus fruits. Because of the well-known hardiness of the trifoliate orange it was decided to cross this with the common sweet orange. As these two varieties are very distinct in character it was found that with the greatest care only about two per cent of the flowers set fruit. However, from the few hybrids obtained, a



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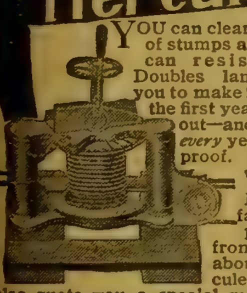

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CITRUS FRUITS IN INDIA

By Henry D. Baker, United States Cousul at Bombay.

The most important district in India for the production of oranges (Citrus aurantium, var, sinensis) is Nagpur, in the Central provinces, about halfway between Bombay and Calcutta. In Nagpur the orange yields or can yield two crops a year. The plants flower from February to March and the fruit is ripe from November to December or January. The second flowering is from June to July, and the fruit ripens from March to April. The oranges of the second crop are the sweetest and coming as they do at the beginning of the hot season are much valued. These are plucked green and thus are rarely allowed to change into the characteristic yellow color of the other crop. About the middle of May the roots are exposed and the plants manured. Pruning is unknown in the Nagpur groves, and with the exception of being watered freely in the hot season, the plants receive little or no further attention.

Oranges are also grown in the Khasia hills in northern India; in the vicinity of Delhi and in the Nilgiri hill districts of southern India. It is quite impossible to furnish any particulars as to the extent of the traffic in these fruits, as they do not appear separately in any trade records; moreover, there is no information as to the area and yield in the whole of India. A few years ago a few parcels of Nagpur oranges were sent to London and appeared much appreciated, but owing to irregularity of supply the trade seems to have discontinued. The Nagpur oranges in appearance and flavor are much like those known in the United States as mandarins or tangerines.

Pomelos or Grapefruit.

The pomelo (citrus decumana) is a common fruit in India, especially in Bengal and South India. The best quality is the thin skinned Bombay pomelo, hence the South Indian name of bombalinas. This fruit is a favorite with the natives of India, the pulp being either white or red, according to the variety grown. The cells of the pulp are very large, and naturally separate from each other. This causes it to be sometimes spoken of as the grape orange. The separated pulp is largely eaten in India as a salad. The Bombay pomelo may be raised from seed sown in February or by budding in February to March on the common limes, or by layers made in pots supported high among the branches.

Citron.

The citron (citrus media, called in India "zamburi") is cultivated sparingly in the warm, moist regions of India, one form being so large as to resemble a pomelo. It is propagated by seeds or layers. It is often ripened within earthen jars before being removed from the tree, and is sometimes grown within molds to make it resemble human faces and other curious forms.

Lemons and Limes.

Lemons (Citrus media, var. limon) are fairly extensively cultivated here and there all over India, although most of the fruit known as lemons are varieties of lime (citrus media, var. acida, called in India "mitha nimbu"). The wild lime in India is the chief budding stock for all species of oranges, lemons and citrons in India. The juice of this fruit is universally used for flavoring soups, curries, fish, etc., since it imparts a pleasant acid taste and agreeable flavor. It is also largely used in domestic medicine. The small sour limes are extensively employed for sherbets and in the manufacture of lime juice and the large ones made into various preserves.

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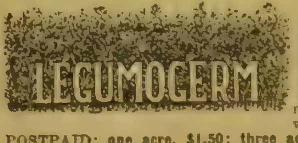

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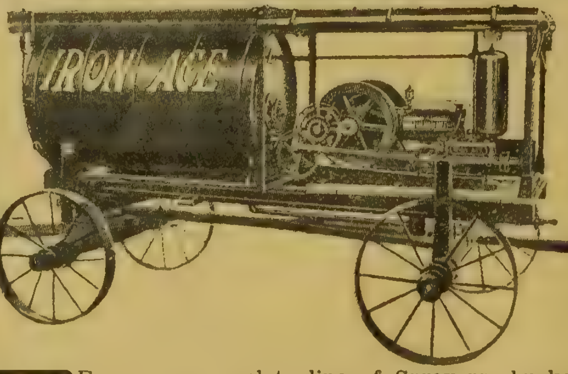

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ORCHARD AREA IN BELGIUM

The fruit orchard area in Belgium is being rapidly extended, recent statistics showing 179,710 acres, mainly devoted to apples, pears, cherries and plums, or an increase of 66,210 acres since the year 1896. Liege Province has 42,860 acres, followed by the Province of Hainaut with 36,850 acres, Province of Limburg with 21,000 acres, West Flanders 19,900 acres, Brabant 18,500 acres, East Flanders 18,150 acres, Namur 14,350 acres, Luxembourg 6250 acres, Antwerp 1850 acres.

The season of 1913 was decidedly unsatisfactory for orchard fruits, says a United States consular report, the crop having suffered from unfavorable weather, especially during the early portion of the year, but the demand from abroad forced prices to an unusually high level. The Germans are heavy buyers of Belgian fruit, purchasing the crops of entire orchards on the tree, immense quantities of apples being shipped across the German frontier from the provinces of Liege, Limburg, Namur and Luxembourg, the bulk of these apples being used in Germany in the manufacture of cider that is commonly sold as champagne, the apple waste being used for the manufacture of syrups, preserves and jams.

English fruit buyers, principally the manufacturers of marmalades and fruit preserves, purchase largely from the provinces of Flanders and the region of Tournay. The cherry markets of Loos, St. Trond and Tongres are well known and during the season the traffic of this class of fruit becomes so heavy that the government transportation agencies under the control of the department of the post-office are obliged to increase their forces in order to handle it. Thus, in spite of the relatively limited area available, Belgium is steadily becoming more important as an agricultural country, and the farm products, particularly orchard fruits, are more and more in demand for export. Of late years, however, instead of selling its supplies of fruit to foreign canning establishments, Belgium has developed to a large extent the canning industry at home, so it is probable that in future the demand for orchard fruits in this country for canning purposes will exceed the supply, causing a still greater advance in prices.—American Fruits.

HOW ABOUT IT?

More than 2000 years ago Cato wrote, "Be a good neighbor. Do not roughly give offense to your own people. If any misfortune should overtake you—which God forbid!—they protect you with kindly interest." The neighbor must do for the farmer what police, hospitals and charities do for those in the city. In any community, but especially in an irrigated country, the good will of a neighbor is of great value, and the bond of sympathy is made stronger and stronger as time goes on. The help of one's neighbor is of economic value to the irrigator, and a man may save many dollars by lending a hand to his neighbor when it is convenient, and accepting the same aid in return. That is one reason why it is seldom profitable in the long run to steal water from your neighbor, or quarrel with him concerning the same.—V. M. Cone, Colorado Agricultural College.

Small Fruits and Vegetables

THIS MONTH IN SOUTHERN CALIFORNIA

Written for the California Cultivator

During this month nearly all varieties of vegetables can be planted, except vines, it being rather late for cucumbers and too late for melons, squash and pumpkins, but it is a good time to plant peas, cabbage, cauliflower, radish, turnip, lettuce, beet, carrot, broccoli, Brussels sprouts, kohlrabi, onions, spinach, kale, mustard, Swiss chard, parsley and endive.

The market gardener in protected sections will also plant potatoes and acres of lettuce and cabbage. Southern California has become headquarters for early shipping vegetables as enumerated above, and many train loads are shipped to northern markets each season. During winter for this purpose the Los Angeles market varieties of lettuce are New York and Wonderful. Planted during this month it requires three months to mature.

In cabbage the Winningstadt is most largely used, but some shippers are planting Danish Ballhead and Cannon Ball, an earlier selection of the Danish. The latter makes a six or eight-pound head and produces two to three tons better yield per acre. than Winningstadt, which only makes a three-pound head.

Of cauliflower the most demand now is for a large head that is well covered, and probably the most popular is the Danish variety, Dry Weather, and also a variety on this market known as Pearl, a California grown selection of Snowball.

Clean up all dead vines and rubbish from garden and either burn or compost. This saves many insect and fungous troubles for next year.

THIS MONTH IN THE SACRAMENTO VALLEY

Written for California Cultivator
By S. S. Rogers

In planning to grow winter vegetables it is of the utmost importance that the proper location and soil should be selected. Under normal conditions the rainy season will commence in two or three months and if the proper precautions are not taken for the location of the garden serious losses may result. Before planting the grower should study carefully the desired crops to be raised and the special requirements of each. The two most important considerations in the choice of crops to raise at any season of the year, aside from the demands of the markets, are their soil and climatic requirements. The former is very difficult and often impossible to remedy, while the latter can often be improved. On account of their naturally good drainage and ability to remain warm the lighter classes of soils are generally better adapted for winter gardening than soils of a heavier character. In many gardens there will be found both of these classes and by a careful selection of the crops this difficulty can be overcome to a large extent, for some vegetables do better in a light soil, while others are better adapted to the heavier type.

For winter gardening such vegetables as lettuce, celery, onions, petatoes, radishes and peas will be found to be especially adapted to the light well drained soils, while cabbage, cauliflower, carrots, beets, parsnips, etc., will do well on heavy soil. Some of the above mentioned vegetables such as onions, radishes and beets can be successfully grown on either class of soil.

Where the drainage is poor raised beds will be found to be very satisfactory and are used to a large extent by the market gardeners. These are generally made four to six feet wide, four to six inches high and as long as desired. These are made very easily by the use of the plow, throwing the earth in such a manner that dead furrows are made every four or six feet. The soil on top of these beds should be worked into shape and packed slightly by the ordinary farm implements. The dead furrows are used for drainage, and if irrigation is necessary water can be run down them, seeping into the beds by capillarity. These beds are generally made about one to two feet apart so that these furrows can be used as walks, making it unnecessary to pack the ground in which the vegetables are growing.

The planting calendar for the Sacramento Valley for this month is the same as given in the California Cultivator on page 128 in the issue of August 6. As stated in the above-mentioned publication, only vegetables which are fairly resistant to frost should be planted. This list includes lettuce, cabbage, cauliflower, celery and all root crops.

The Ornamental Garden

THIS MONTH IN SOUTHERN CALIFORNIA

Written for California Cultivator

August was a quiet month in the garden. With September comes bulb planting, and in some other respects it's the opening of a new year. Of course with the browning of some leaves and the taking up of the "spring" blooming bulbs it seems like fall, but the next year's work in the ornamental garden should be well planned this month.

But first, keep the lawn and trees well irrigated this month. Last winter's rains are gone down so deep that no plant reaches them, so that neglect to apply water may result in permanent injury. Even if leaves are dropping the tree needs moisture at the root. Valuable plants are lost because of withholding all water at this period.

Water the roses heavily, also fertilize them if you want Christmas bloom.

Chrysanthemums will soon be in their glory. Fertilize and water heavily. Golden glow and goldenrod are blooming profusely. Plan for larger beds next year.

But the bulbs. Order some new ones this year. Watsonias are wonderful flowers and not expensive. Planted this month they will bloom in April, and their sword-like leaves are handsome the winter through. They boast "the whitest flower that blooms," and it's a beauty.

Iris may be divided this month. So many new varieties are offered by growers that no names will be mentioned, but any iris is handsome and some are handsomer. In addition to the more common German varieties try a few of the Spanish and Japanese types. The former are cheap; the latter cost money, but they are worth it.

Don't forget our California Humboldt lily. All seedmen handle it, or it may be found in almost any mountain canyon if you'll only dig for it.

Sow eucalyptus and cypress seed this month for trees for next spring's planting.

Start violets and plant pansies. Use fine rich soil in flats or boxes and keep moist. It is in order to plant almost all annuals, especially California poppies. At least gather the seed for poppies this month.

Water freely the poinsettias which will be in bloom in a couple of months.

Clean up the weeds and rubbish. Don't burn it, but pile with leaves and all kinds of rubbish and a little dirt, then keep wet. Next year it will make fine potting soil.

THE AUTO CLUB

Written for California Cultivator

By Gordon Gassaway

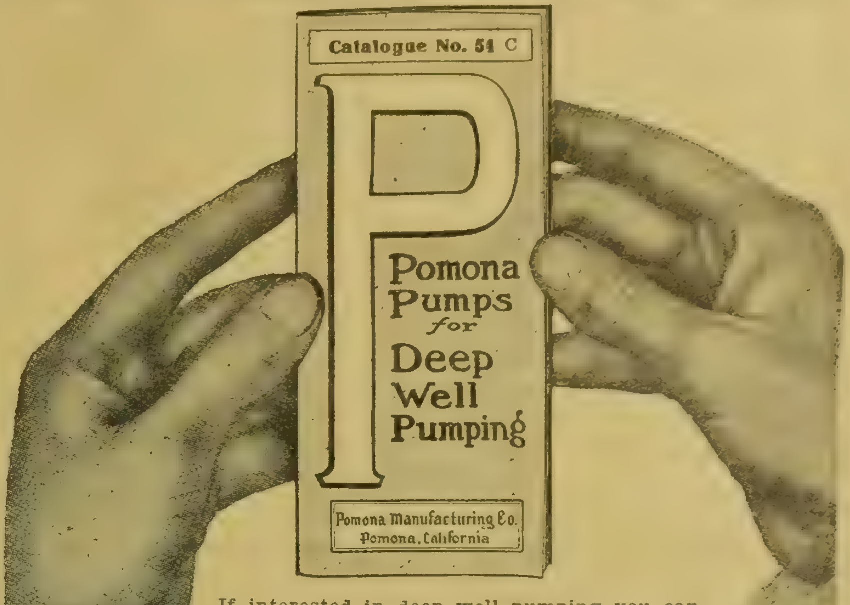
What is the Automobile Club of Southern California doing for the state? That is a question which motorists south of the Tehachapi have answered by seeking membership in the organization.

To the agriculturist the auto club is an asset, and its name appears upon the profit side of the book. Twenty years ago the blushing beet was carried to the urban markets over country lanes by good old Dobbin. Today the farm produce is carried to the cities over macadamized roads, for the most part, and in many instances by the motor truck, while Dobbin munches grass out in the back pasture. Good roads did not always exist; there had to be incentive, and this was found in the advent of the pneumatic-tired automobile—and the united efforts of the organization which has become known as the Automobile Club of Southern California.

Within the last six months the Auto Club has added more than 1300 members to its roll. This is a significant step in its campaign to reach a total of 10,000 members by 1915, and 45,000 by 1920. To unite all of the motorists in Southern California into a single body for the promotion of good roads and the maintenance of a comprehensive sign-post system, is the plan of Secretary S. L. Mitchell. With this announced intention to the present membership, each active worker has been engaged in seeing that his friends are proposed for joining the ranks. Present members are rapidly taking this campaign into their hands and are bringing the total up to the desired 10,000.

Actual accomplishments for the state by the club have been many. A signpost system reaching across the continent to California from Kansas City is being erected by the club. This system will point the way west to thousands of motorists in 1915. Better legislation has been outlined by the club for the good of motorists and for the improvement of roads. Around the club has circulated an activity which could not have been started by any organization other than one of motorists.

Motorists are of all localities, and the Auto Club has found, according to Secretary Mitchell, that the suburban automobile owner is usually most active and most enthusiastic when it comes to boosting for new roads and boulevards.



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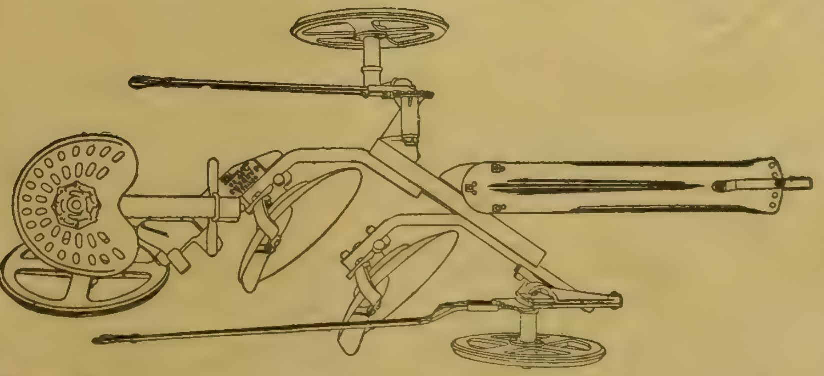

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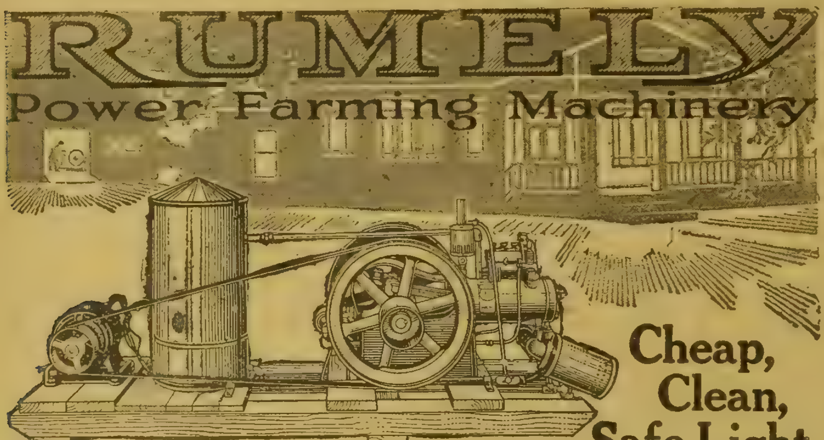

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Choosing a Tractor for the Farm

Written for the California Cultivator

It is easier to make a mistake in getting too small a tractor than too large a one. Such a mistake results largely from looking first at the question of the cost of the tractor rather than the question of the results to be secured from its use.

The size tractor that every farmer needs is not the tractor that will enable him to do his work in the way he is now doing it, which in the majority of cases is not the way in which farming should be done to raise the biggest crops, but the size tractor which will enable him to do all of his work in the right way and at exactly the right time in order to raise the largest crop possible.

Definite experiments have been made which show that to increase the depth of plowing from one-half to double the usual depth, will greatly increase the crops. Deeper plowing results in a better root bed for the plant. It increases the food and water supply. Probably the most accurate tests of the importance of deep plowing have been made by the Kansas state agricultural college. By increasing the depth of plowing from three inches, which they say is "common practice among farmers," to seven inches, it was found that the increased depth gave an increased yield of six and one-third bushels per acre in a three-year average.

Experiments made by the University of Wisconsin show that to double the depth of plowing, requires an increase of 70 per cent in power. Plowing in the early summer when the ground is hard likewise demands more power.

These facts should be given first consideration in determining the size of tractor which will be the most profitable one to buy. One should select a tractor of sufficient size to be able to plow in hard ground and plow deep, and not a size with only enough power to do the work in the way it is now being done.

Furthermore, it is not only important to have sufficient power to plow in hard ground and to plow deep, but to have enough power to do all of the farm work at the time when it should be done.

In fact the question of timeliness is of such great importance in the matter of increased crops that one of the farm papers places it first in point of importance, saying that "timeliness or doing things at the correct time is the keynote of the problem of cultivation."

It is also important to remember in this connection that overloading a tractor is a serious mistake, just as is overloading a horse. In the first place, where a tractor pulls only the load which it is designed to pull, the slippage is but small, but when it is overloaded the slippage increases at a rapid ratio. Furthermore, overloading not only rapidly decreases the pulling power, but also rapidly increases the liability of breakage, resulting in serious loss of time, while the tractor with the normal load for which it is intended will be able to keep working steady at it right along and in the end will do far more work than an overloaded tractor.

These are the first three factors to be borne in mind in choosing the size tractor that will result in your getting the most increased profits—first, get a size tractor that will produce enough power to do the work in the best possible way. Second, get a tractor that will produce enough power to do all your work at the time when it should be done. Third, get a tractor with enough power to do the work in the right way and at the right time and do it when pulling a normal load and not an overload.

It will surprise a great many people also to know that a larger size tractor is in most cases the most economical—that it will not only enable the purchaser to produce bigger crops, but at the same time will enable him to produce those crops at less cost than with a smaller size tractor.

Prof. I. W. Dickerson of the University of Illinois has presented this phase of the matter more completely than we have seen elsewhere. In his article, Prof. Dickerson compares the operating cost of a medium-size tractor and a small-size tractor on a 140-acre farm. These are the figures which he gives:

Medium-sized tractor, 140-acre farm:

Interest on $1800 for one year at five per cent	$ 90.00
Depreciation on $1800 for seven days, counting eight years life of 40 days each	39.38
Wages, seven days, at $2.25	15.75
Fuel, 25 gallons kerosene per day at eight cents	14.00
Oil, grease, repairs, estimated at $1.50 per day	10.50
Total	$169.63
Deduct driver saved for harrow four days, at $1.50	6.00
Total cost	$163.63

Small tractor, 140-acre farm:

Interest on $750 for one year at five per cent	$ 37.50
Depreciation on $750 for 18 days, counting eight years life of 40 days each	42.19
Wages, 18 days, at $2.25 per day	40.50
Fuel, 15 gallons kerosene per day at eight cents	21.60
Oil, grease, repairs, estimated at $1.00 per day	18.00
Total cost	$159.79

He then says: "The most surprising thing about this latter case is the very trifling advantage of the small tractor over the medium-sized one, considering the fact that the farm in question is less than a quarter-section. It is probable that the greater suitability of the medium-sized tractor for ensilage cutting, shelling, etc., would wipe out even this small margin. It would seem to be clearly indicated that the two-plow tractor is not as economical as a larger outfit for the average general farm."

It should also be noted clearly that with the small tractor it required 18 days to do the same amount of work as was done in seven days with the medium-size tractor, and that while in the end the cost with the small tractor was practically the same as the cost with the large tractor that, because of the greater time required, there should undoubtedly be figured against the small tractor, the fact that the crops produced would be lessened on account of the work not being done at the proper time. Prof. Dickerson also does not figure in the further fact that the overloading of the small tractor, which one is inclined to do when he does not have sufficient power, results in decreased length of life and increased yearly repair bill. When all of these factors are taken in consideration—the first mentioned by Mr. Dickerson that the medium-sized tractor can be used for many additional kinds of work; the second, that because of the fact that with the small tractor the work cannot be done at the right time and the crops will thereby be reduced in size, and the third that the overloading of the small tractor will result in decreased life and heavier repair bills—when all of these factors are considered, it is plain to see that a larger size tractor is more profitable and more economical than a smaller size which would just enable a man to do his work in the ordinary way by stretching out the time and by overloading the machine.

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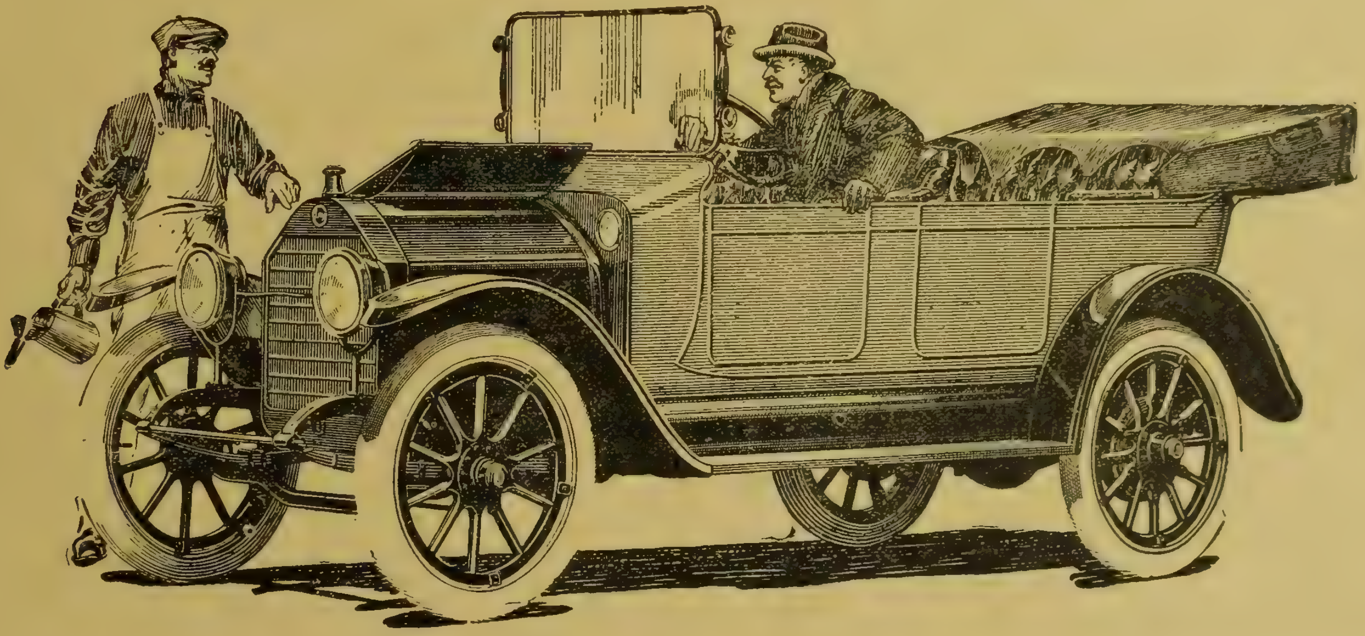

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HOW TO GET LONG MILEAGE

By F. A. Henderson

Two factors contribute to the life of a pneumatic automobile tire; the first is a tire well made and of good material; the second is the tire care necessary to secure from this tire the mileage which its maker has already done all he can to make maximum. The tire is purchased by a dollar-and-cents consideration; tire-care needn't be purchased; it's available to every motorist who cares to apply it. And that it pays and pays big is what every motorist who has tried it knows.

All-important is the air pressure carried. It is just as important as the tire containing it. It preserves the body of the tire—its fabric. Next in importance is the care of the tread—the tire's protection. These two precautions prevent the more common causes of tire trouble. Having observed them and made maximum mileage a possibility, the motorist will wish to go farther and make it a certainty. To discuss the means of reaching this end, is the purpose of this article.

The most damaging wear to which a tire can be subject is what it receives when used on a wheel that is not running parallel to its mate, a condition designated by "wheels out of true." This occurs on the front wheels. An accident, improper adjustment of steering apparatus, or even hitting the curbstone diagonally, may throw the wheels out of line so that they point inward or outward, as the case may be, instead of paralleling each other along the road. Tires used on wheels in this condition instead of rolling over the ground with a minimum of friction as they should, are compelled to slide over the ground diagonally, the sidewise component of this motion grinding off the rubber from the tread as effectively as an emery wheel.

The remedy for this trouble is obvious; straighten the wheels. Any garage man can do it. Before beginning a trip, the motorist usually inspects the machine to see that everything is in good shape. Extending this inspection to the wheels will quickly detect any such condition. This can be tested approximately by adjusting one of the front wheels so that when you kneel down in front of it and sight back, it just lines up with the rear wheel on the same side. The other front wheel then ought to line up with the corresponding rear wheel. If it doesn't the wheels aren't true. A more exact method is measuring with a tape line the distance from the inside of the rim on the wheel on one side to the inside of the rim on the wheel on the other side, using points at a distance from the ground equal to the height of the hub. The distance in front of the axle ought to equal the distance behind; if it doesn't, the wheels aren't true.

In the same way, a demountable rim put on crooked or the end of an axle bent, causing the wheel to wobble, will wear off the tread too rapidly.

A peculiar property of rubber due indirectly to its elasticity, is that it can easily be ground or filed, while if simply rolled over even a rough surface—the treatment a tire ought to receive when in service—it will last almost indefinitely. For this reason, suddenly locking the brakes and sliding or skidding the tires, will in a few feet distance wear them as much at one place as several hundred miles of service. It doesn't pay to lock the brakes anyway, for they are most effective and stop the car quickest when the wheels, instead of sliding, still grip the road. As locking the brakes therefore is a practice with nothing to recommend it, the importance of avoiding it can't be too strongly emphasized. It's also well, frequently to make sure that both brakes are binding equally, for if they aren't, the wheel with the tighter band is bound to wear out its tire too soon.

Speeding and the use of stone roads wear the tires faster than moderate driving on sandy roads. It pays to avoid the road with deep ruts. The sides of the ruts chafe the tire's side walls and lay bare the fabric.

Similarly, driving in car tracks or against curbs centers the wear on the side of the tire. The remedy is simple—avoid car tracks and curbs.

Sometimes the fender becomes loose so that as the car passes over bumps the fender is urged down so that it gouges into the tire. This soon cuts the tire at the place the metal fender hits it as the tire spins around. To avoid, simply make sure nothing touches the tires as they revolve.

It also goes without saying that oils and grease are to be avoided. They act chemically on rubber and cause its rapid deterioration.

GOOD CARE IS ECONOMY

I have owned a touring car for the past seven months. It had been driven 4000 miles before I bought it and I have driven it about 6000 miles since. Formerly it had very rough usage, but I gave it good care and no one else ever drives it now. It has done hard work over bad roads and with heavy loads, and has not needed repairs yet. On rainy days when it is too wet to work outside you will find me in the garage looking over my car, testing the engine and putting a bit of oil around the spark plugs or wherever needed.

If I find any tendency to leak compression I make a thorough mixture of one-half white lead and one-half graphite, and after unscrewing the spark plug I fill the threads of the screw with this mixture, as well as the threads in the cylinder head into which the plug screws. Then I screw in the plug, leaving it for a few minutes to set before running the engine. In this way I have always been able to stop all leaks in any part of the engine.

Testing the Spark.

I then start the engine and see if it runs evenly at all speeds without pounding or missing an explosion. At times, if you will put on the brake and make the engine pull, you will notice that one cylinder doesn't give as loud an explosion as the other three. This is because one of the plugs doesn't fire as it should, or perhaps there is a short circuit in the wire somewhere.

This can be found by disconnecting one wire at a time from the plug, then start the engine on—three cylinders and hold this wire near to the plug from which it was taken, drawing it away repeatedly to see if it has a good spark and how far it will jump. Continue in this way until you have tried all of them. If you find one that does not give as strong a spark as the rest, change the plug, putting one of those already tested in its place.

If the second plug gives a good

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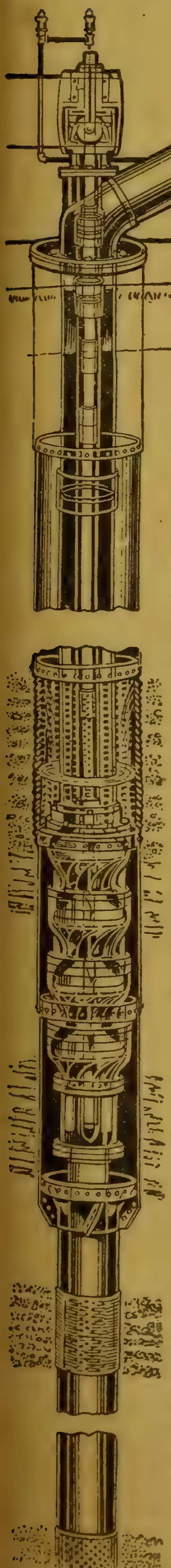

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spark you may know that the original plug was defective; if it does not give a good spark, the trouble is probably in the wiring, though if dash coils are used it may be located there. In that case change them by substituting one that is out of order, then try the spark again. In this manner I have always been able to locate the trouble.

Look Up.

It is well to get under your car, lie on your back, and look at every working part to see if there isn't some burr just about ready to come off. If anything of that kind should happen when on the road it would cause much trouble and perhaps an accident. I have found them loose on my car a great many times, and had I not discovered the danger when I did they would have caused serious break-downs.

And break-downs mean repair bills—and the man that has those is the man that doesn't spend his spare time in the garage inspecting his car. For the same reason he doesn't know how to put the repair on when he gets it, and either must waste a large amount of time puttering with it—just when he is most anxxious to use the car—or pay the repair man more than it cost in the first place. Had he spent one hour a week on his back under the car he could have avoided all this disappointment and expense.

The same is true of tire troubles, which can usually be prevented by looking over the tires carefully every few days when in use. If there is a weak place that looks as though it might cause a blow-out before long, I take the tire off and put in a blow-out patch; or a re-liner is a fine thing to use when the casing is worn, and this with a blow-out patch over the outside will make it almost as good as a new tire and affords a wonderful discount on tire expense.

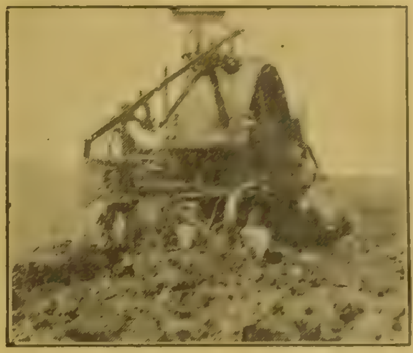
In manipulating the spark and throttle I always try to advance the spark all it will stand without hammering. If possible I give the car a run for a hill—providing there's no ditch or culvert at the bottom. Never drive a car slowly until the foot of the hill is reached and then try to pick up speed while mounting it. for that is a strain on any engine and will soon ruin it. The spark should not be advanced so much on a hard pull or when going up hill as it is on the level. I save a great amount of gasoline by advancing the spark when the engine is not working hard, but even then it can be advanced too much.

Saves Time and Money.

I have found the auto a very useful machine on the farm; it saves both time and money. If you live a long way from town it takes all day to go to town and back with a team, and that means one day's work lost in the field. And it doesn't take many such days in harvest time to knock one out of the price of a medium-priced car. If your binder breaks down and you have to go to town for repairs, you can make the trip in one-tenth the time it would take with a team. Besides, it gives pleasure to the whole family. There is nothing like an automobile for keeping the boys on the farm.

Everything considered, I cannot see that there is any more profitable investment. My neighbor told me the other day that he didn't think he could farm any more if he had to do without a car, and said he believed that in a few years people wouldn't live on a farm without one. And I feel the same way about it; I surely would not do without a car, no matter what my business.—S. W. S. in Nebraska Farmer.

The "FORD" of the Agricultural Field



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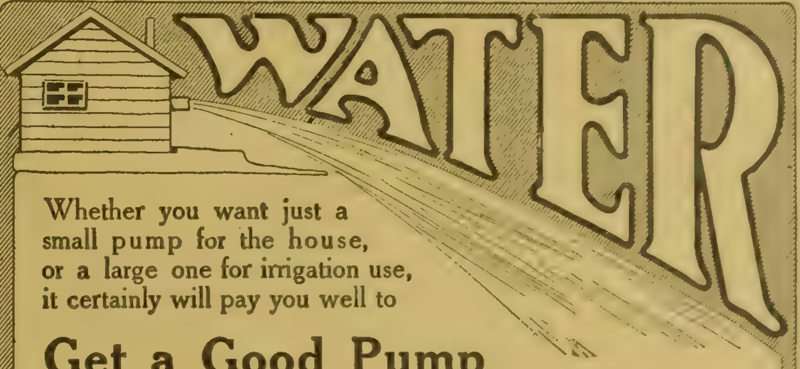

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A Journal of Horticulture and Agriculture

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Thursday, Sept. 3, 1914

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We guarantee our subscribers against loss through dishonesty of any advertiser in the Cultivator. We do not attempt, however, to adjust trifling differences between subscribers and honest, responsible advertisers, nor will we pay the debts of honest bankrupts. Notice of complaint must be sent us within 30 days from date of the transaction, and the subscriber must have mentioned the Cultivator when writing the advertiser.

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PIGS IS PIGS

California farmers are furnishing to California packing houses only some five or six per cent of the hogs required. California is importing from eastern states many millions of dollars' worth every year of pork and pork products. California farms and climatic conditions are favorable to pork production. California is not a corn growing state, but it is a barley growing state, and barley makes a finer pork than does corn, and California has barley to burn.

Hog cholera is probably the cause of the discouragement which swine raisers have felt, and which has resulted in the reduction—for there has been a reduction—in pork production. The east has nothing on us when it comes to hog cholera, but the eastern farmers seem to be more persistent in overcoming it and are producing quantities of pork. For several months the quotations on live hogs have been marked up. It is not probable that they will remain at the present high price indefinitely, but with barley and alfalfa people begging for purchasers for great quantities of hay and grain on hand, why are we not feeding it to our own stock?

PILING UP WHEAT

Every shipping port of the country is now receiving vastly more wheat than can possibly be sent to the foreign markets which are asking for it. We have this year produced nearly a billion bushels, or 242,000 above the average for the past two years. After each American has taken out his five and a third bushels, which is said to be our average per capita consumption, there will be still about 250,000,000 bushels for export. But the hungry world is unable to get it and will be until we can adapt our shipping to the new conditions. It is to be hoped that the European war will result in one thing, and that is the putting of America on a little more independent basis.

WORKING AGAINST NO. 3

Farmers of the Sacramento and San Joaquin Valleys made up excursion trains to San Francisco and other bay polling places on Tuesday, August 25, and paraded from one precinct to another, carrying circulars showing wherein Proposition No. 3 would prove a menace to laboring people in cities as well as in the country. In one particular it would certainly strike the city laboring people, and that is in the increased cost of farm products. The increase will not be entirely caused by the restricted hours, but because the restriction will prevent making the most of many farm products when they are at their best. The losses on many farms cannot help but be great under this measure.

THE FIRST VESSEL

Los Angeles united in honoring the first vessel which passed through the canal and landed a cargo in a California port. Last Saturday the Missourian entered Los Angeles harbor and she was presented with a silver service by the city of Los Angeles. The effect of the war on the commerce of the world will prevent the testing of the value of the Panama canal as soon as we had hoped, but the coming of this vessel is the forerunner and we believe a promise of wonderful advancement in California's interests. If California will now prepare to give to our merchant marine, which we hope will be created, the goods to carry, we believe means will be provded ultimately for their carrying.

EIGHT-HOUR STICKERS

Every farmer who is convinced of the necessity for voting down the eight-hour proposition, which is Number 3 on the ballot to be submitted to voters on November 3, should write Farmers' and Fruit Growers' Federation, 740 Consolidated Realty building, Los Angeles, and ask for little gummed stickers for putting on the back of every envelope sent out between now and election day. These may be had for the asking. The text of the sticker is, "I ask you for continued prosperity to vote 'No' on Proposition No. 3, the eight-hour law. You help! Send for and use these stickers! Address Farmers' and Fruit Growers' Federation, 740 Cons. Realty Bldg., Los Angeles."

We haven't seen it suggested elsewhere, but why would it not be a fine slogan to use from now until election day: "On Nov. 3 Vote 'No' on No. 3?"

STATE CONVENTION

It is too early to say much about the program of the coming state fruit growers' convention, but Dr. Cook informs us that there already have been enough acceptances to his requests for addresses to be made at that convention to give assurance of one of the finest conventions ever held in California. Much talent from the East has already been promised and Californians are entering fully into the spirit of it. The local committee at Los Angeles, where the convention is to be held, has secured the place of meeting, arranged for headquarters and is making every plan for the comfort and pleasure of the guests. Within the next week or two we will give more definite outline of the good things of the convention.

THE AUTOMOBILE

With only one or two states of the Union ahead of California in number of automobiles and none equalling her in number of self-propelled vehicles in proportion to population, California is able to do business more swiftly than any other section of the country—and she does it—for we believe that farmers and others in this state accomplish more in proportion to their capital and acreage than in any other state in the Union. For that reason the automobile or any other form of power farming is sure to increase in popularity.

Probably the greatest service the automobile has given to California is the securing of the construction of good roads. Whether the farmer owns a self-propelled vehicle or not he is sure to be interested in getting his produce to market with the least injury from dust, bruises and wilting possible, and California good roads have aided wonderfully in this particular.

There has been much prejudice against this machine, but it is gradually disappearing, and we believe that as its usefulness is more appreciated the state will advance with greater strides. There are now in this state more than 116,000 automobiles.

PRIZE PHOTOS

A couple of weeks since we expressed a desire for a number of photos for use in our columns, and to give a bit of spice to collecting them we offered prizes for the best which would be sent in. Though only about one week's notice was given, a fine collection was offered, and from them we have selected four, which appear on page 237. We believe that this contest, which will be continued for a few months at least, will bring in many attractive photographs of Pacific coast farm life. Though only four photographs are used in this issue, more than a score of others which are exceptionally fine will be printed in later issues of the Cultivator. We hope the next contest, photographs for which must be in our hands by September 24, will be even more spirited than this one has been. As before, the prizes will be $2 and $1, and for the next five who send photographs of sufficient clearness and of enough interest to answer for illustrations, a year's subscription to the Cultivator.

Another contest for prizes which will result in many valuable hints is explained on prize photo page. It will be of particular interest to women readers.

Agricultural News Notes

The National Dairy Show will be held in Chicago October 22-31.

Tin has more than doubled in price since the outbreak of the war.

The acreage of hay in Ireland is considerably more than twice as great as the acreage of all other farm crops combined.

The South American market is being canvassed by the Northwestern Fruit Exchange. Deals involving over 30,000 boxes of northwestern apples already have been closed.

An inferior crop of olive oil is expected in Syria this year; less than half a crop is expected in the Seville district of Spain; the prospects in Italian north Africa are very good.

Wood pulp to the value of two and a half million dollars was brought into the United States from Christiania, Norway, last year. This is the largest export Norway makes to this country.

Four public markets for the sale of food stuffs direct from the producer to the consumer were opened September 1 by the city of New York to combat the increased cost of living, since the war broke out.

Many business houses, offices and banks of the Middle West were closed during the latter days of August while the business men went out into the harvest fields to help the farmers handle their bumper wheat crop.

Our import trade for 1913 was approximately fifty and a half million tons; our export trade practically an equal amount. Of this 94 per cent was carried by vessels sailing under foreign flags. Hence the activity of congress on the shipping problem.

Department of justice agents, it is said, have discovered that packers are shipping a large quantity of meat across the Canadian border. At the same time the prices on meats are advancing. Department officials are at a loss to explain how the packers can export meat and still plead that there is a shortage. The packers will be given a chance to explain.

For the purpose of improving the breed of cattle in the Pacific Northwest, some important purchases of English cattle have been made there for James J. Hill. One shipment is of 50 dairy Shorthorn bulls, which will be given away to as many counties in that section of the country. Each one of these bulls is born of a cow with a milk record of 10,000 pounds.

An apple crop of 210,000,000 bushels is forecasted by the department of agriculture. That is about 65,000,000 bushels more than last year, but 25,000,000 less than in 1912, and about 4,000,000 bushels less than in 1911. The apple crop in several western states is estimated: New Mexico, 900,000; Arizona, 100,000; Nevada, 200,000; Idaho, 150,000; Washington, 7,600,000; Oregon, 3,300,000; California, 5,300,000 bushels.

Owing to the drouth from Calgary south to the international line the wheat and oat crops are not very promising, and judging from present conditions the yield will not exceed one-half of last year's crop. The same statement applies to the southeastern part of Alberta, but east of Medicine Hat, where rain came when most needed, the indications are for 65 per cent of a crop. The southern part of Alberta is badly in need of rain, as the excessive heat is burning up the fields.

Agricultural News Notes of the Pacific Coast

Northern California

The St. Helena vintage festival will be September 4-7.

Oroville sheep men are making the regular fall clip of wool.

The Alameda County fair will be held at Pleasanton, September 23-27.

The harvesting of almonds is in full swing at Orland, Glenn County.

Placer County expects to market this year about $72,000 worth of hops.

Sutter County vineyardists will harvest their largest grape crop this season.

Newcastle is anticipating the establishment of another big gold dredger.

Napa Grange Patrons of Husbandry recently met and discussed the eight-hour bill.

Alameda County is the latest with a farm adviser, S. H. Nixon having been appointed.

Directors of the Napa County farm centers met recently at Napa and organized a farm bureau.

All packing houses of Sebastopol, Sonoma County, are running full handed on Gravensteins.

Material extension of the good roads will be made in the Sacramento Valley during the next few months.

Vacaville, Solano County, has shipped 623 cars of fruit, as compared with 628 cars last year, same date.

The first annual show of the Sacramento Poultry Association will be held in Sacramento November 2-7.

The management of the university farm at Davis is planning for short courses which will begin in November.

Sacramento County is planning to fight coccus citricola in its citrus producing section, and Deputy Horticultural Commissioner Weldon is cooperating with the county horticultural commissioner in planning the work at Fairoaks.

Central California

Tulare creameries paid out nearly $70,000 last week.

Dinuba's first car of cured fruit for 1914 was shipped last week.

Turlock has shipped 126 carloads of watermelons and 183 of cantaloupes.

All the fruit canneries at Visalia are running full handed and overtime.

The Associated raisin stemmer is in operation in the warehouse at Reedley.

Western Fresno County Malaga grapes are selling for $19 and $20 per ton.

The Associated Raisin Company has named prices on the coming season's output.

Dinuba is discussing the growing of sugar beets to send to the Visalia factory.

Many herds of dairy cows have replaced the herds of beef animals of Chowchilla.

Fresno shippers are planning to ship a cargo of 10,000 tons of dried fruits direct to Europe.

The creameries at Hanford, Kings County, paid last week to dairymen in excess of $30,000.

Fumigation operations are becoming more general all over Tulare and Fresno County citrus sections.

Modesto irrigation district's issue of bonds to the extent of $610,000 has not yet been sold because of lack of bidders.

During the hottest weather some of the hay growers at Newman, Stanislaus County, made hay while the moon shone.

Active work on the Hetch Hetchy proposition has begun and San Francisco anticipates a greatly increased supply of water.

Fumigators of Tulare County have been assured that they will be supplied with sufficient cyanide of sodium to finish this season's fumigation.

Southern California

Imperial Valley is using the hopper dozer on its grasshopper pest.

California is the second largest apple producing state in the Union.

The Hemet Valley of Riverside County claims a fine crop of apples this year.

Escondido is making plans for a great celebration on Grape Day, September 9.

Yucaipa Valley apple growers are working on plans for their annual apple show.

Sweet potato growers of the Anaheim section have organized a marketing association.

Shipments of citrus fruits from Highland, San Bernardino County, totalled 2,210 cars.

Orange growers of Pomona received their final checks on the season's shipments last week.

Fumigation tents in practically all the orange sections of California are in active operation.

Riverside County fair will be held October 6-10. There will be trotting on each day of the fair.

The International Fruit Products Company has its plant at Riverside ready for operation.

The Indians of the Pala reservation in San Diego County will hold an agricultural fair September 2-6.

Orange County lima bean producers are receiving about $6.25 per 100 pounds for September delivery.

An Orange County potato grower near Huntington Beach has a record of 195 sacks of spuds to the acre.

Orange County reports its walnut harvesting operations as practically three weeks in advance of the usual season.

Imperial Valley is receiving $12,000 per day more revenue for its butter than last week because of advance in quotations.

The Coast

Alfalfa is selling at $12 per ton in western Montana.

Yakima, Washington, has shipped 560 carloads of fruit to date.

Northern Idaho hay crop will run about 90 per cent of normal.

Eastern Washington reports practically all of its grain crop in stacks.

The Northwest Fruit Distributors is shipping far more fruit than one year ago.

The San Luis valley of Colorado will feed about 400,000 head of sheep this season.

One thousand sacks of grain were recently destroyed at Logan, Utah, by a cigarette fire.

Intense heat in the section of Silverwood, Oregon, has been modified by liberal showers.

Thousands of men are fighting fires in a line 44 miles long in Montana and northern Idaho.

Managers of the fair at Willcox, Arizona, are planning for the finest fair to be held this fall.

Farmers at Chandler, Arizona, united with the merchants' association and held a picnic last week.

Strawberry Valley, Utah, will soon establish an irrigation system, waters being taken from the Weber River.

Eastern Washington reports apples ripening earlier than usual and the entire crop of exceptionally high quality.

Live stock men of the Salt River Valley have suffered great loss this year because of hunters shooting stock.

Several California alfalfa growers have been buying largely of Utah live stock to bring to the coast for fattening.

Fruit growers of Cache Valley, Utah, met recently and discussed methods of disposing of the coming crop of apples.

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The Plow that is built to stand the strain of deep plowing.

Makes a furrow 14 inches wide and 14 to 16 inches deep.

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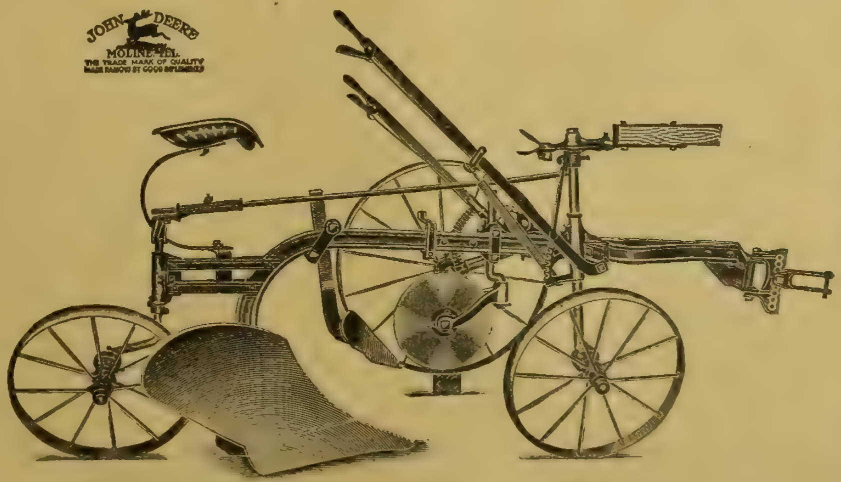
Covers all trash.

Equipped with jointer as well as a rolling coulter.



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Furrow wheels, 24 inches Mounted on adjustable axles.

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Avoid the Dangers of Stall Feeding

GILBERT HESS, Doctor of Veterinary Science, Doctor of Medicine

I want to warn you in time that stock taken off pasture and put on dry feed are pretty apt to get out of fix, because corn, grain, hay and fodder do not contain the laxatives so abundantly supplied in grass.

Some of your animals are sure to become constipated, others off feed, rough in the hair, with paleness of the eyes, lips and nostrils, or the legs may stock or dropsical swellings of the abdomen appear, or the urine may become yellow and thick; but the common ailment of all is worms.

DR. HESS STOCK TONIC

Makes Stock Healthy. Expels Worms.

Being both a doctor of medicine and a veterinary scientist, I formulated Dr. Hess Stock Tonic to correct these evils. It contains a laxative substitute for grass, diuretics to remove dropsical swellings, tonics to improve the appetite and increase digestion and vermifuges to expel worms.

Right now is the time to feed Dr. Hess Stock Tonic, because it's the cow in the pink of condition that fills the milk pail, the steer with an appetite that lays on fat, the horse that digests its dinner that pulls on the bit.

So sure am I that Dr. Hess Stock Tonic will put your animals in a thriving condition, make the ailing ones healthy and expel the worms, that I have authorized your nearest dealer to supply you with enough for your stock, and if it does not do what I claim, return the empty packages and get your money back.

Dr. Hess Stock Tonic is never sold by peddlers—only reliable dealers; I save you peddler's salary and expenses, as these prices prove: West of Rockies: 25-lb. pail $2.25; 100-lb. sack $7.00. Smaller packages in proportion.

Send for my book that tells all about Dr. Hess Stock Tonic—it's free.

DR. HESS & CLARK, Ashland, Ohio

Dr. Hess Poultry Pan-a-ce-a

A splendid poultry tonic that shortens the moulting period. It gives the moulting hen vitality to force out the old quills, grow new feathers and get back on the job laying eggs all winter. It tones up the dormant egg organs and makes hens lay. Also helps chicks grow. Economical to use—a penny's worth is enough for 30 fowl per day. West of Rockies: 1½ lbs. 25c; 3 lbs. 50c; 7 lbs. $1.00; 25-lb. pail $3.00. Guaranteed.

Dr. Hess Instant Louse Killer

Kills lice on poultry and all farm stock. Dust the hens and chicks with it, sprinkle it on the roosts, in the cracks or keep it in the dust baths, the hens will distribute it. Good alike for horses, sheep and cattle. Be sure to see the name "Instant" on the can before you buy. Comes in handy sifting-top cans. West of Rockies: 1 lb. 25c; 3 lbs. 60c. I guarantee it.

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A highly concentrated feed for cattle, swine and poultry.
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Live Stock and Dairy

A FEW RULES GOOD FOR FITTING SHOW STOCK

"Special preparation of animals that are to be exhibited at fairs and shows is absolutely necessary for success," says J. G. Fuller of the agricultural college, University of Wisconsin.

"Stock cannot be taken directly from the pastures and put into the show ring with any legitimate hope of success. Animals that are to compete for prizes should be carefully housed and fed from two to four weeks and groomed a number of times before going to the show. During the day they should be kept in a cool, darkened stable and turned out for green feed and exercise only at night, when flies and insects will not bother them.

"The horse exhibitor should see to it that all of his animals are thoroughly halter broken and easily handled. He should take along plenty of blankets, rope halters, and neat bridles. Horses' feet must be carefully looked after and those of the older animals shod before leaving the home stables.

"Show animals ought to be thoroughly fitted and in good flesh before they reach the fair grounds so that during the fair they may be kept on a cooling ration, thus avoiding danger of sickness from overeating. While at the fair, stock requires at least one hour of exercise a day. This is very essential to insure good health and the wise exhibitor will use the early morning to lead his entries about the grounds."

THE MERRY-GO-ROUND OF PROSPERITY

By Douglas Malcolm

"There are men in my neighborhood," said a country merchant, "whom I call 'endless chain farmers,' while there are others whom I call 'breakers,' the latter so called because I know that there will be certain periods of each year in which they will have a break in their incomes. The first always pay as they buy, while I look out that the second only buy as they pay."

This merchant was not a farmer himself, but he had grown rich doing business with them and he knew the financial standing and the farm methods of every man in his community. In a little speech which he once made he explained his endless chain theory: "Farming," said he, "entails every law of political economy ever mentioned by John Stuart Mills. There is unearned increment, a margin of utility, the law of supply and demand, the manufacturers' profits, consumption of raw material, plant depreciation, and the labor question. Over some of these economic principles the farmer has present control, while over others he has none. He can more or less control raw materials, manufacturers' profits and plant depreciation—in fact, his success as a farmer depends on the way he handles these three factors. Taking the corn crop for example, his raw material consists of his corn and fodder, and his manufacturers' profits are determined by the way his cattle and hogs turn this raw material into marketable beef and pork, and his plant depreciation depends on the disposition he makes of the humus in building up his soil. A farmer who sells his corn as he harvests it, leaving his fodder to shrivel up in the field, who gives no thought to replacing the plant foods which each crop takes from the soil, makes a profit only from his raw material, and when that is sold his income ceases.

"On the other hand, the farmer who saves his fodder, shredding it for the mow or chopping it for his silo, has cheap raw material wherewith to feed cattle and hogs who manufacture it into butter fat, beef and bacon, the sale of which brings in a steady all-year income. These in their turn provide fertilizer which next year makes the soil richer, so that there is more raw material for feed, more cattle and hogs to sell, more money constantly coming in, and so on, year after year. These are what I call 'endless chain farmers.' They are the ones who live comfortably, enjoy farming, and send their boys and girls to college."

Probably the most comfortable farmers of this country are the corn raising farmers, because, as the little black dots on the government map show, they have more hogs and more cattle per capita than the others. There are approximately 100,000,000 acres of corn to be harvested this fall—the richest, most productive crop our country knows—and yet in connection with this harvest there is an equal probability that a fair per cent of the value of this crop will be wasted. Sad as it is, it required centuries to find out that from 30 to 40 per cent of the nutritive value of the corn is in the stalk, leaves and husks, and it has not been learned entirely yet that even without a silo the corn stalks on the farm, when properly shredded, have a feeding value practically equal to timothy hay and prairie grass and a fertilizing value far in excess of either.

All farmers do not have silos, but more and more are seeing the light, and each year thousands of these profit-getting obelisks are being erected. The value of the corn stalk is being widely advertised, but still there are those who do not realize that it is the finest auxiliary roughage when fed with either ensilage, clover or alfalfa, as a balanced part of the grain ration. For instance, in a recent experiment at the agricultural college of Nebraska, it was found that "stover fed with alfalfa returned a value of $4.57 per ton, in comparison with alfalfa at $6.00 per ton as the sole roughage." In another experiment, this time at the New Jersey station, it was found that of 200 pounds of corn stalks fed to a cow during ten days, 60 pounds, or 30 per cent, remained uneaten. This corn was unshredded but carefully harvested. The editor of Farmers' Bulletin No. 107, of the United States department of agriculture series, in summarizing the results, says: "shredding would no doubt result in more complete consumption of the stalks."

In none of these trials, however, has it been claimed that shredded fodder is as good as ensilage, for it is not, but the demarkation line between the two as rough feed for

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would have saved a great many of the 7,420,912 hogs valued at $59,455,700.00 lost in United States during 1913 from

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The Standardized, Reliable Dip and Disinfectant.

We will send you free a booklet on the treatment of mange, eczema or pitch mange, arthritis, sore mouth, etc.

We will send you free a booklet on how to build a hog wallow, which will keep hogs clean and healthy.

We will send you free a booklet on how to keep your hogs free from lice and parasites and disease.

Write for them—they are free.

KRESO DIP No. 1 has been used at the large state fairs in the United States for the last ten years to prevent the spread of contagious disease. It has done it, and KRESO DIP No. 1 will do the same for you on the farm.

KRESO DIP No. 1 is Easy to Use—Reliable—For Sale by All Druggists—Effective—Not Expensive.

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100 lbs. makes 100 gals. of perfect, smooth nourishing milk substitute.

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The Greatest Dairy Breed.
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cattle is closer than the ordinary believer knows.

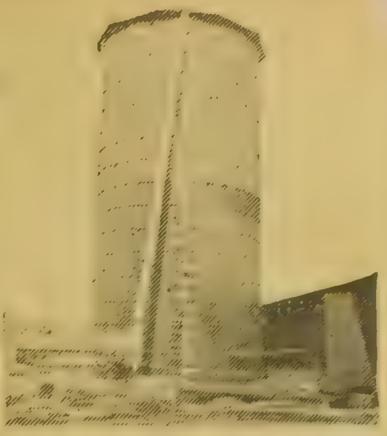
In the Pennsylvania station Bulletin No. 83, corn stover and corn silage were compared with two lots of six steers each. They were fed with the concentrates, corn and cottonseed meal. In 126 days of the test the average gain on corn stover was 214 pounds per steer and on silage 240 pounds. The total cost of the corn stover ration was $103.73 and of the corn silage ration $109.91.

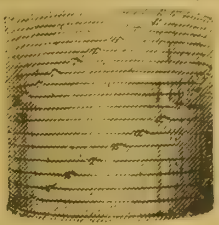
Husking and shredding machines will not efface the silo, far from it, but they will efface a portion of the enormous waste of our corn crop, both of silo owners and of others. How great this waste has been can only be conjectured as a whole, but by the acre a pretty accurate calculation can be made. Thus, for example, if the value of the ear corn from an acre of ground amounted to $25, the value of the shredded corn stalk from the same acre would be normally $14.68. Multiply this by every acre of corn left (unshredded) and the amount would be enough almost to support the poor of our big cities.

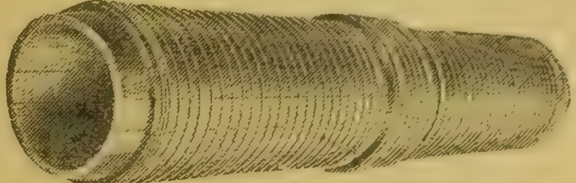
The average yield of corn stover is between two and three tons per acre. Were we only to allow it one-third of the average feed value of good hay, we should require only three acres of the fodder to equal one acre of hay. Now, hay is one of the most negotiable commodities coming from the field. There is always a market for it, and of late years it has commanded good prices, and yet in nearly every part of the country where shredded fodder has become customary it required a short hay crop to awaken the community to the fact that shredded stover was hay or is hay in everything but the name and reputation.

Selling the hay and feeding the fodder is one link in the endless income. Cheap food and high priced butter and beef is the second link. A third link, so to speak, is in the nature of a rebate. We get back part of what we give. In farming, as in business, we must render unto Caesar what we take from him, and in this case Caesar is the soil. Without going into the detail of soil chemistry, it is sufficient to say that unless we return nitrogen to the field from which we gather our corn crop, our corn yield will grow less each year, just as the wheat yields are diminishing in the prairies.

Stable manure is by far the best natural fertilizer within the reach of the average man, but the way it has been handled would cause a chemist to weep. Liquid manure is laden with gold bearing nitrogen, but to be saved and utilized it must come in contact with something of an absorbent nature. Corn stalks do not absorb at all, many straws absorb poorly, but shredded stover, singularly enough, acts like a blotting paper. It is the king of beddings. It is easily handled, goes through the spreader nicely, and rots easily. It is next year's insurance for next year's income and it does not lessen any the returns for the current year. The signs of the agricultural times indicate to those who can read signs that it is only a matter of time when barnyard humus will be as jealously conserved in this country as it is now in Japan and India, and that the farm in the future without a spreader will be as unique as the farm today without a wagon. The United States Agricultural Department and the







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THE CUTTER LABORATORY, Berkeley, California.

6 lbs. More Butter Fat a Day in 6 Days' Time

—that's what F. T. Shaver of Holtville, Cal., says. Read his letter.

"I wish to send praises in regard to your dried beet pulp. I have fed it for three years, and am glad to state it is the best grain for a milk producer with a heavy butter fat test I have ever used. It saves hay and keeps the cows in good condition.

"As we do not have to feed pulp here through the summer, I commenced November 1, last year, and the cows produced six pounds more fat a day in six days' time. Thirty-two cows milked as high as 96 gallons of milk, or 29.8 pounds butter fat a day. Twenty head were old milkers. I feed the pulp wet."

Hundreds of other dairymen will also tell you of the wonderful value of Larrowe's Dried Beet Pulp as a milk producer and conditioner. It improves every ration; balances perfectly with alfalfa.

RICH IN NUTRIMENT — CLEAN — SUCCULENT

Larrowe's Dried Beet Pulp is clean, wholesome, appetizing; aids digestion; contains five times as much nutriment as silage with as great or greater succulence—swelling to fully six times its original bulk when moistened. It will not only increase the quantity and quality of milk, but keep the herd in better health with less bag trouble and greater contentment. Try it now. Go to your feed dealer today and buy one sack. Test it on one cow whose milk record you know and watch results.

LARROWE'S MOLASSES-DRIED Beet Pulp is preferred by many feeders on account of its sweetness. Just the plain beet pulp with beet molasses dried. Fine for fattening, also for horses.

Our booklet—"PROFITABLE FEEDING" gives valuable information and feeding instructions. Should be in the hands of every dairyman. Write for a copy—free.

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AN IDEAL GREEN FEED SILO will pay for itself the first year. That being the case, it will cost you nothing.

AS A MATTER OF FACT, THE COST of a silo is really a secondary consideration, because if you are keeping dairy cows or raising stock for the market, there is no investment you can make that will pay you better returns than an IDEAL GREEN FEED SILO.

A GOOD SILO IS A NECESSARY PART of the dairy equipment of every cow owner or stock raiser who wants to realize a reasonable profit from his herd, and if the matter of cost has been standing in your way, please remember that it is really not a question of whether you can afford to erect a silo, but whether you can afford to do without one.

IF YOU HAVE NO SILO, A LITTLE investigation will be sure to convince you that you ought to purchase one right away.

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State schools in advocating the wider use of shredded stover are playing safe, because they are not advocating a policy which is going to cost those who practice it extra money. Many tests have proved that husking by hand in the field as compared with cutting the corn with a binder and husking it with a machine, allowing for machine depreciation and all that, costs practically the same. The shredding is thrown in and the corn fodder is practically velvet. From 250 to 1000 bushels of corn can be husked in a 10-hour day, depending on the equipment. And whether one owns the machine himself or hires a custom outfit, the annual cost of husking by hand and binding and husking by machine is so near identical that there is no choice.

The main difference between the two methods is that one gives you rheumatism and the other gives you fodder.

Veterinary

Answers in this column by Dr. Wm. Petrie, 2714 South Harvard Blvd., Los Angeles, are without charge. For immediate mail answer remit $1.00. In writing questions give full symptoms or particulars of injury of animal.

Bad Blood

Please give remedy for cow that breaks out with hard lumps on neck and body and also on udder. She bites the front legs back of the knees and rubs and scratches herself a great deal. Otherwise she is in the best of health. Where she can lick the sores it forms hard scabs which come off when washed.—Subscriber, Graham Station.

Skin diseases are usually due to local causes, but this seems to be in the blood. Have your druggist prepare the following: Powdered gentian, four ounces; powdered nux vomica, two ounces; sulphate of iron, two ounces and farina, four ounces. Mix and make into 16 powders. Give one every night. Also get one pint of Fowler's solution of arsenic and give one ounce every morning.

Cough from Dusty Hay

I have a cow that has been milking with her first calf for nearly a year. A month or more ago she begun to cough and stands with her tongue out after coughing. She has fallen off a little in flesh, but has a good appetite and chews her cud all right. Bowels and kidneys are regular. What ails her and what is the remedy?—Subscriber, El Centro.

The whole trouble may be due to dusty hay. It might cause indigestion, which is often accompanied by a cough. Also the dust that she breathes would aggravate it. Feed her nothing but the green alfalfa and some bran for a few days. Also give her enough salt to loosen the bowels a little. Then give dry hay again, but be sure it is not dusty. Oat hay would be good for a change. Sprinkle the hay with water that has a little salt and baking soda dissolved in it.

Swallowed Barbed Wire

In the Cultivator of Aug. 13, on page 163, a question was answered under the heading, "Sick Cow," and suggestion was made that the animal might have swallowed a piece of barbed wire. Here is another letter regarding the same case. The owner had enclosed $1 and received a reply by return mail. It came too late, but this is what he says: "Your prompt reply to my letter concerning sick cow received and appreciated. The cow died the day before in great agony. Chewed barbed wire, threw her head against posts and the sides of buildings; was perfectly crazy. Cut her open and found lungs highly inflamed and full of corruption. Even the flesh inside of the ribs covered an inch deep with spongy matter. After receiving your letter, performed a second postmortem and discovered what you suggested, a piece of crooked wire about three inches long puncturing stomach, diaphragm and lungs. You surely know your business. Thanking you again for your promptness and courtesy.—Subscriber, Rio Bravo."

Paralysis

Would you kindly tell me what to do for a brood sow with little pigs that seems to be paralyzed in her hind quarters and cannot get up? She is constipated and I have given her castor oil, but it does no good.—Subscriber, Santa Rosa.

To loosen the bowels change the food, and if this does not do then cook the food for a while. For medical treatment get the following: Salicylate of soda, two drams, and tincture of juniper, one pint. Mix and give a tablespoon once a day.

Garget

Is there any cure for a cow that has front teats dry, presumably from garget? Can anything be done for garget when it first appears to prevent teats going dry? What are the first symptoms? — Subscriber, Rio Bravo.

Garget may be caused by a bruise, but it is often due to a microbe that enters through the end of the teat, and in that case is contagious. The first symptoms usually noticed are a little cheesy substance in the milk, which may be accompanied by a swelling of one or more of the quarters. There is usually a fever present also, but this is often so slight that it is not noticed. When the symptoms first appear the cow should be given a physic of one pound of epsom salts, half a pound of common salt and a tablespoon of ginger dissolved in about two quarts of hot water and when cool given at one dose as a drench. Wash the udder with warm water containing a little carbolic acid. One who has many cows should also learn to prepare a solution of iodide of potash to inject into the udder. This will destroy the microbes if any are present. The solution should be prepared with boiling water and kept antiseptically clean and when cool enough injected, but if anything gets into it, it would do more harm than good.

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Insist on Having
French's Poultry Mustard
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French's Poultry Mustard is a scientifically manufactured article containing the flours of different mustard seeds so blended to produce the greatest strength in the volatile principle that is desired, and is required to produce the fortunate results arrived at by the users.

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A teaspoonful to six to twelve fowls fed daily in dry or wet mash. Booklet for the asking.

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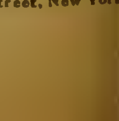

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Practical Auto School, P66 Beaver Street, New York

Profit in the Poultry Yard

CARE OF YOUNG CHICKS

By H. L. Kempster

Studies at the Missouri Agricultural Experiment Station warrant the following recommendations in regard to the care and feeding of young chicks:

During the first two days of the chick's life it should rest and be kept warm. It is better without having food until it is forty-eight hours old. Then the following mixture should be fed in dry litter and also in a shallow tray: Three parts finely cracked wheat, three parts finely cracked corn, one part steel cut oats. Keep some of this in the litter all the time.

Chicks should have access to a clean drinking fountain which should be so constructed that they cannot get themselves wet. It is also desirable to give them access to sour skim milk or buttermilk. Twice daily the chicks should receive rolled oats or the following mixture: Three parts bread crumbs, three parts corn bread, one part boiled egg. This mixture may be fed dry or it may be moistened with sour milk. A very small amount of charcoal and finely cut green food should also be fed.

Keep the following mixture in a box where chicks may run to it at all times: 30 parts wheat bran, 30 parts cornmeal, 30 parts wheat middlings, 10 parts beef scrap, sifted fine, and one part bone meal.

Keep fine charcoal and grit where chicks may have free access to it. Feed four times daily. Continue the green feed and give the chicks milk. It may be advisable to feed a wet mash once a day at 4 p. m. Feed only what the chicks will eat up clean before going to roost. Change gradually from chick food to cracked corn and wheat. Chickens that are not yarded should be fed corn and wheat in litter as a scratch food and should also have access to a dry mash in a hopper where they can help themselves.

Raise chickens with the simplest rations possible. Clean food, consisting of cracked and ground grain; animal food, such as sour milk, buttermilk, commercial meat scrap and bone meal; clean water, plenty of shade, comfortable and dry quarters, freedom from lice and access to clean, fresh earth are essentials for successful brooding.

POULTRY SHOW DATES

Sacramento, Sept. 12-19, 1914, State Fair Poultry show, J. L. McCarthy, secretary, Sacramento, Cal.

Riverside, Oct. 13-17, 1914, County Fair Poultry show, E. I. Hammond, secretary.

Anderson, Cal., Oct. 22-24, 1914, O. W. Dais, secretary.

Stockton, Cal., Oct. 28-31, 1914, W. H. Mackay, secretary.

Sacramento, Cal., Nov. 2-7, 1914, C. A. Wilkins, secretary, Sacramento, Cal.

Santa Cruz, Cal., Nov. 11-14, 1914 inclusive, E. J. Harran, secretary, Santa Cruz, Cal.

Petaluma, Cal., Nov. 11-16, 1914, Thomas McGuire, secretary.

San Mateo, Cal., Nov. 12-15, 1914, Fred West, show secretary, box 701, Burlingame.

Willows, Cal., Nov. 18-21, 1914, Otto F. Schuchard, secretary.

Oakland, Cal., Nov. 24-29, 1914, Chas. G. Hinds, secretary, 535 42nd street.

Pasadena, Cal., Dec. 1-5, 1914, M. D. Cartwright, secretary, Pasadena, Cal.

Modesto, Cal., Dec. 2-5, 1914, A. D. Roberts, secretary.

San Francisco, Cal., Dec. 8-13, 1914, inclusive, W. H. Ingram, secretary, Fruitvale, Cal.

Porterville, Cal., Dec. 15-17, 1914, A. D. Fawcett, secretary.

Phoenix, Ariz., Dec. 23-26, 1914, Arizona state show.

Newburg, Ore., Jan. 5-9, 1915, C. Duer, secretary.

Coeur d'Alene, Idaho, Jan. 6-9, 1915, O. A. Laaks, secretary.

Los Angeles, Cal., Jan. 6-12, 1915, Henry H. Mumford, secretary, Prospect avenue, South Pasadena, Cal.

Albany, Ore., Jan. 7-10, 1915, E. Schoel, secretary, Albany.

Tacoma, Wash., Dec. 29-Jan. 2, 1915, J. A. Caddey, secretary.

AGE OF HENS AND PIGEONS

There has been a great development of late years in the Canadian poultry industry. This development has been brought about by many factors, chief among which are the untiring and highly successful efforts of breeders; the experimental work carried on at the various poultry plants of the dominion and provincial experimental farms and agricultural colleges, the information given out by these institutions, the poultry exhibits, in which the people of Canada are now taking a great interest, and, last but not least, the profits of the industry, little thought of in the past, but now well recognized and appreciated.

Record books have been established for horses, cattle, and many other animals, where information pertaining to pedigree, age, etc., are kept for reference, but it has remained to Victor Fortier, Assistant Dominion Poultry Husbandman, Central Experimental Farm, Ottawa, after much personal observation and study, to publish a method whereby the age of hens can be accurately estimated. This information, which is meant especially for the breeder and the judge, has been published under the direction of the Hon. Martin Burrell, in a profusely illustrated bulletin, which is No. 16, Second Series of the Central Experimental Farm. Copies will be mailed to those who apply for them to the Publications Branch, Department of Agriculture, Ottawa.

COOPERATIVE EGG CIRCLES

"The Organization of Cooperative Egg Circles" is the title of pamphlet No. 4, by W. A. Brown, B. S. A., of the poultry division of the live stock branch, Dominion department of agriculture. In introducing this subject the writer defines a cooperative egg circle, states the need for organization and the work that can be accomplished.

Copies of the pamphlet may be obtained upon application to the Publications Branch, Department of Agriculture, Ottawa, Canada.

"Speak the truth, do your work, and see the glory of it all," a man who knew life said to a college class.

That last phrase holds the secret of the highest success. But only to the faithful worker is the glory revealed.

Half the joy of life is in little things taken on the run.—Cherbuliez.

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Now is the Time to Get Incubators for Fall Hatching

540-Egg Size
$45 Prepaid

THE "PIONEER" INCUBATOR has been so satisfactory in the hands of every buyer that we have decided to sell them on the easy payment plan. A small payment down and the balance in three equal payments of 30 days each. We pay the freight and sell for less than any other factory.

We claim and guarantee the "PIONEER" INCUBATOR TO BE THE highest class Incubator in America, regardless of price. Send today for INSTALLMENT PLAN AND FREE 32-Page Catalog.

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RIGHT NOW WE CAN SUPPLY PULLETS OF many varieties at most any age. Write us your wants, stating age and number and variety wanted. We will be GLAD to quote you. Laying Hens, Cocks and Cockerels always on hand. Breeding RABBITS OF ALL KINDS on sale daily.

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The Summer Season

Don't expect to cram for eggs in the fall without preparation during the summer.

COULSON'S EGG FOOD

used during the summer will reward you with a good egg yield in the fall. Secure it from any reliable poultry supply house.

Coulson Co
PETALUMA, CAL.

Do you know poultry diseases?

Can you detect them when they first appear? Do you know what to do to keep them out of your flock?

It is uncontrolled disease that eats up poultry profits; therefore, the man who knows how to fight it is in a good position to become a successful poultryman.

Our POULTRY BOOK tells these things in a clear, concise way. It tells you facts you need to know and every poultry owner should have a copy. Send four cents in stamps today and we will gladly mail you yours. Address your letter to our Consultation Dept.

The G. E. CONKEY COMPANY
101 Conkey Bldg., Cleveland, Ohio

WHEAT for Chicken Feed

We have several cars of small grain wheat, clean, sound and sweet. For a short time we offer it at the following prices:

Less than ton lots, $1.75 per 100 lbs.
Ton lots, $34.00 per ton.
Prices, f.o.b. cars Los Angeles.
Special price by the carload.
Sample on request.

West Coast Seed House
116-118 E. 7th St. Los Angeles, California

farm for money

Hogs can be produced at Fairmead for 4 cents per pound. Present prices, 8 to 10 cents cash. That's farming for real money. Good cows at Fairmead are bringing in $8.00 to $10.00 each cash per month. One acre of alfalfa at Fairmead will support a cow or 12 to 20 hogs the year round.

Why not farm for money at

FAIRMEAD

The can't-be-beat fruit and alfalfa section of the San Joaquin Valley, where land prices are still low. Fill out and send today the following coupon:

Co-operative Land & Trust Co.,
Owners,
595 Market Street,
San Francisco, Cal.

Kindly send me your free booklet, "How to Obtain a Farm at Fairmead on Easy Terms."

Name ....

Address ....

SECOND HAND PIPE AND CASING

All our pipe and casing has newly cut threads with new couplings attached and dipped in asphaltum. Guaranteed good as new. Prompt delivery on carloads or less. Small orders receive same attention as large ones. All sizes of pipe, also fittings and valves.

WEISSBAUM PIPE WORKS
169 Eleventh Street, San Francisco

MONEY MAKING LITTLE LINERS

Inserted in These Columns Under a Classified Heading. A Clearing House for Our Many Thousands of Readers.

LINER RATES ARE 12c PER LINE PER ISSUE

No Ad Accepted for Less Than 36c Per Issue. Figure 8 Words to a Line.

MACHINERY

SECOND HAND WINDMILLS, TANKS, PIPE
PUMPS—ENGINES
RANCH AND POTATO MACHINERY

New 1000 gal. galzanized tanks, $19.50; 2000, $29.50; 8 ft. windmills, $19.50; 10 ft., $29.50; 12 ft. $45.00.

HAY MACHINERY

La Dow baler, $95.00; Whitman Power baler, Southwick Power baler, binders, headers.

POTATO MACHINERY

Potato diggers, planters, cutters, cultivators, harrows, plows, Holt tractor, sprayers, sundries.

ENGINES AND PUMPS

8 H. P. Stearns, $135.00; 20 H. P. Stearns, $195.00; 28 Lambert, $295.00; 35, $350.00; Ames double acting, deep well pump, $135.00; single acting pumps, $20.00 to $60.00. Centrifugal pumps half price.

SUNDRIES

Bankrupt sale new stocks and dies half price; gears, large pipe fittings, pulleys, belt.
Demmitt Co., upstairs, 120 N. Main, Los Angeles.

We have pumps, motors and engines of all sizes and for all conditions, which we will sell or rent. If you want a complete plant or any part, write us your needs and get our prices. Can give you special low price on engine and automobile oil, also belting. Machinery & Motor Exchange, 733-735 San Fernando street, 732-734 New High street, Los Angeles, Cal. Main 6382.

For Sale—Used and new gas engines, 2 H.p. up, rebuilt and fitted with modern equipment. 22 years' experience enables us to repair and rebuild gas engines correctly. Get our prices. Lloyd, 806 N. Main, Los Angeles.

For Sale—American Bean Thresher; 4 h. p. engine, used one season. Price, $60.00 f. o. b. Santa Rosa. O. L. Triggs, Santa Rosa, R. D. 7.

LIVE STOCK

Ohio Improved Chester White (O. I. C.)—Four boars, March farrow left; 8 sows, June farrow, ready next month. Selected sows bred for October farrow; pigs ready to ship December 1st. Three herd boars in use. All stock cholera immune. Booking orders now. Crated and registered free. C. B. Cunningham, Mills, Sacramento County, Cal.

Grape Wild Farm Thoroughbreds—Guernsey Bulls of A. R. Breeding. BERKSHIRE HOGS. Finest herd in the state. All ages for sale. A. B. Humphrey, proprietor, Mayhews, Sacramento Co., California.

For Sale—Two thoroughbred registered Hampshire belted boars, five months old. Extra fine stock; $25 each f.o.b., Oceanside. Ben F. Thorpe, Bonsall, Calif.

For Sale—Young Saanen Goat—buck, fertile, white, born hornless. Ready for service this season. No postcards answered. John Stewart, Box 27, Mentone, Cal.

Thoroughbred Berkshire Boars of all ages from developed and large-boned hogs. Riccomi Bros., Mountain View, Cal.

For Sale—Toggenberg Goats, cheap. Some choice Toulouse geese. Mrs. J. B. Guerard, Box 28, R. D. No. 3, Merced, Cal.

For Sale—Young registered Berkshire boars and sows; fine strong stock; boars ready for service. Stanislaus Ranch Co., Crows Landing, Calif.

Glenview Poland Chinas—Stock for sale. Chas. R. Hanna, R. F. D. No. 3, Riverside, Cal.

N. H. Locke Co., Lockeford, Cal.—Choice young Jersey bulls for sale.

TREES.

For Sale—One and two-year-old Washington Navels and Valencia Orange Trees. Eureka Lemons and Marsh seedless grapefruit, for Spring 1914 delivery. Write for prices, or call and examine stock at Morris Citrus Nurseries, Cor. Juanita and Valley Center, R. F. D., Box 34, San Dimas, Cal.

For Sale—50,000 Sour Orange seed bed stock, finest quality, or will let to responsible party on percentage basis; also 2000 A1 late Valencias, two years old next spring, or might exchange for Washington navels. H. H. Eshelman, Soldiers' Home, Cal.

The 1200-Acre Nursery, growers of 1500 varieties of trees and plants. OREGON NURSERY CO., Orenco, Oregon. Sales office, 522 Chamber Commerce, Los Angeles, Cal.

1000 Avocado Seedlings—Pots, also can furnish nice plants, bare root, at low price. A. A. Quint, R. D. No. 2, Pasadena, Cal.

For Sale—Eureka Walnut Trees, budded on Native Black Walnuts. Choice stock. Order immediately. Don't delay. Wm. Holve, Fullerton, Cal.

Citrus Nurseries, Murphy Oil Company, East Whittier, California. Selected stock for sale; inspection invited.

You Future Nurserymen—Write for prices on special stocks of plants to start business with. Ballou's Nursery, Pasadena, Cal.

Budded Citrus Trees and seedlings at fair prices. Will take auto or land. Butler's Morning Side Nursery, P. O. Box 145, Lamanda Park, Cal.

MISCELLANEOUS.

Free for Six Months—My special offer to introduce my magazine "INVESTING FOR PROFIT." It is worth $10 a copy to anyone who has been getting poorer while the rich, richer. It demonstrates the REAL earning power of money, and shows how anyone, no matter how poor, CAN acquire riches INVESTING FOR PROFIT is the only progressive financial journal published. It shows how $100 grows to $2200. Write NOW and I'll send it six months free. H. L. Barber, 430, 28 W. Jackson Blvd., Chicago.

FOR SALE
Perfectly equipped
propagating plant,
fine opening for an
all round man. Plenty
of deciduous and olive
budding.
Box 63, Rialto, Cal.

Ford 1913 Touring Car with top and full equipment, including new tires. Just overhauled and in best condition. Low price and easy terms, or exchange for diamonds. Also a foot-power lathe with all tools. Fine for general repairs or a small garage. Price, $35; cost $125. Harry T. Koenig, Santa Barbara, Calif.

ORCHARD HEATERS

I have 1500 unused No. 1 Troutman which will close out at 15 cents each, and about 2000 (used one season and exchanged for larger size) at price of 10 cents each. W. H. Fowler, Ontario, Cal.

"Smith's Pay the Freight"—To reduce the high cost of living, send for our Wholesale to Consumer Catalogue. Smith's Cash Store, 112 Clay St., San Francisco.

For Sale—600 feet 3-inch surface irrigating pipe, 5 cents foot. Galvanized iron, good condition, 20-foot lengths; taper sleeve on end. H. J. Woodhouse, R. D. 1, Pasadena, Cal.

State, Indian and government land. Write for booklet. The California State Land Information Bureau, Sacramento.

BEES

It pays to keep bees on the farm, raise your own honey, make considerable profit besides. We can supply gentle Italian bees at 3.50 for five frame colony, five dollars for ten frames, and ship anywhere by express. Write for our free price list of bees, instruction books, etc. Spencer Apiaries Co., Box 14 Nordhoff, Cal.

FARM LANDS FOR SALE.

VICTORIA, AUSTRALIA, WANTS SETTLERS

Special inducements; government land, railways free schools; cheap irrigation; 31 years to pay for farms adapted to alfalfa corn, grains, fruit, etc. climate like California, ample markets; reduced passages; special excursion next November. Free particulars from F. T. A. FRICKE, Government Representative from Victoria, 687 Market St., San Francisco, Cal., Box X.

For Sale—10 A. level river bottom land all under cultivation. Now 5-room house, barn and out buildings. Under new irrigation canal. Excellent for truck garden, berries or chickens. Worth more money. Will sell within next twenty days for $1,750.00. Three-quarter miles from town. Anderson Realty Co., Anderson, Calif.

Irrigated Farm for Sale—80 acres level clay loam, 2 miles to R. R. and county seat at Wheatland, Wyo. Adapted to alfalfa, potatoes, grains, beans and peas. $75 per acre, includes land and ample gravity flow irrigation water. No healthier climate anywhere. A. N. Clark, Box 391, Lansing, Mich.

Apple Orchards—Large and small, in the only apple producing section in California. The greatest section west of Missouri River. Write for booklet. Geo W. Sill & Co., Watsonville, Cal.

Ranches, homes, acres, lots, exchange; send for free list. Wilson Bros., Santa Cruz.

POULTRY

How to Make Money—Mrs. A. Basley's latest Poultry Book is without exception the best ever written. The secret of how to raise every turkey hatched and the "Basley Formulas," now published for the first time, are worth many times the price of the book. The "Western Poultry Book" is a practical book by a practical woman. Price $1. Order from Cultivator Publishing Co.

For Sale or Exchange—Wanted, 100 pullets, Plymouth Rocks, R. I. Reds or Orpingtons, to feed my Burbank Spineless cactus to. You want the cactus, I want the chicks. 50c slabs for 50c pullets. Address or ship to H. L. Bauers Cactus Ranch, 4401 Hummell St., Los Angeles, Cal.

Poultry Wanted—We pay the highest market price for all the local poultry we can get, no matter how large the quantity; also fresh ranch eggs. We remit immediately. National Poultry Co., successors to Allaway & Layton Co., 607 E. Third St., Los Angeles, Cal.

Barred Rock Cockerels (Hawkins' Royal Blue Strain) ready for fall mating. All the popular breeds of baby chicks every week after Aug. 15th. Order early and avoid the rush. Enoch Crews, R. 1, Santa Cruz, Cal

Baby Chicks—White Leghorns, McFarland strain, Barred Rocks and R. I. Reds. Ship anywhere and guarantee safe arrival. J. W. Lyon, R. D. 1, Box 170, Gardena, Cal.

Trap-Nested White Leghorns—Bargains in Cockerels from heavy layers. Only $1. A. R. Schroeder, Box C, San Gregorio, Cal.

Barred Plymouth Rocks — "None better." Special prices for May and June. Write for 'em. C. H. Vodden, Los Gatos, Cal.

SEEDS AND PLANTS

Grow Sudan Grass — The new forage crop — endures drouth, yields heavy, excellent in feeding value. Plants rogued and seed personally inspected by experiment station officials. The supply this year is limited. Seed one dollar per pound. B. D. Short Rhome, Tex.

Must Be Sold—1000 cuttings Burbank Spineless Cactus, $10.00 per hundred. Milch goat does and kids. Edgar Wooldridge, Lakeport, Lake Co., Cal.

Thornless Cactus Slabs for sale at 5 to 15 cents each. Chas. R. Hanna, R. D. No. 3, Riverside, Cal.

For Sale—Canada field peas, 3 cents per pound. Address Foss Bros., Lakeside, Cal., or residence, Alpine, Cal.

Luther Burbank and Mediterranean Spineless Cactus Plantations, San Dimas, Cal., R. F. D. 35 A. Get prices. Plant now.

WANTED.

Wanted—Place as foreman or superintendent. Thorough in all lines of farming, fruit growing and irrigation. Experienced in working all kinds of labor. Address Box F. H., Cultivator.

Salesman—Earn $2000 to $4000 a year. New combination, 12 tools in one. Sells at sight to contractors, farmers, teamsters, fence builders, threshers, miners. Weighs 24 pounds, lifts 3 tons. Stretches wire, pulls posts, hoists, etc. Chance for men who want honest money making proposition. Harrah Manufacturing Co., Box M., Bloomfield, Ind.

Wanted—Position as manager on orchard or general farm by Cornell agricultural graduate with five years' experience in the northwest. Expert on fire blight and other tree diseases, and competent to handle big proposition successfully. Can furnish very best references. R. W. Hitchcock, Medford, Oregon.

Farms Wanted—We have direct buyers. Don't pay commissions. Write describing property, naming lowest price. We help buyers locate desirable property Free. American Investment Association, 12 Palace Bldg., Minneapolis, Minn.

Wanted—To hear from owner of good farm for sale. Send description and cash price D. F. Bush, Minneapolis, Minn.

Wanted to Exchange—For a side hill plow, a 12-inch John Deere plow in good condition. Wm. T. Mantz, R. D. 12, Box 367 A, Los Angeles, Cal.

RABBITS

For Sale—New Zealand Reds. No other rabbits raised on the Richey ranch, we have found out which are the best and most profitable, handsome and gentle. Breeding does, $4.00 and $5.00 each; bred to first prize buck. It pays to buy the best Mrs. C. A. Richey, R. D. 8, Box 557, Los Angeles, Cal.

New Zealand Reds—Scored and sold on merit. Investigate. Our catalog is free. Caldwell Bros., Los Angeles, Cal., Box 613.

HORTICULTURAL PRINTING

Catalogues for the seed and nursery trade. The live stock and poultry industries are a specialty with us. Two thousand illustrations to select from Write for prices and samples. The Kruckeberg Press, 237 Franklin St., Los Angeles

SLIGHTLY ADDLED

A scholar at a local night school inadvertently spelled the word Venice with two "n's." The teacher, a clever man, but not always a correct speaker, sternly inquired:

"Do you not know, young man, that there is only one 'hen' in Venice?"

"Then eggs must be very scarce there, sir," was the ready reply.

Legal

Edw. L. Payne, attorney, 301-304 Douglas Building, Los Angeles, will answer legal queries in this department.

Immediate mail replies cannot be given except where fee to Mr. Payne is paid. When replies are wished in Cultivator address query to 115½ N. Broadway, Los Angeles.

Closing Streets

A subdivided 80 acres of land in five-acre tracts. Plat of the subdivision was recorded. A number of streets, 20 feet wide, were set aside to be used as streets. B bought one of these five-acre tracts, then A sold the balance of the tract to C, who decided to close the street and use his 75 acres as a farm. Has B any redress or can he in any way keep the streets open? None of the streets directly pass his property. If C can close the streets in spite of B, what steps will C have to take? And if B can prevent C from closing street, what steps should B take? — Subscriber.

Unless the streets were accepted by the county, and thereby became public streets, or unless B bought with the understanding and as a condition precedent to his purchase, that all of the streets would be kept open, I do not think that B has any right to keep them open. If the streets never became public by not having been accepted by the proper authorities, or by not having been used for five years by the public, C does not have to take any steps to get them vacated, but may close them himself. If B has any rights in the streets, to have them kept open, his remedy is by injunction.

Water Right

A locates on 160 acres at mouth of canyon and files on all water in said canyon—15 inches—and uses same for irrigation. Ten years later B locates in same canyon and uses water for domestic purposes, but diverts no water from stream. Twenty years later C buys B's land, also right of way across A's land. Now C claims riparian right to domestic water which he uses on land purchased from A and other adjacent land, but uses none on land purchased from B. Has C any right to more water than B used and has he a right to divert it from land purchased from B? Please define prior right, also riparian right.

If the land purchased from A is not adjacent to the stream, C has no riparian right for that land. A riparian right belongs only to land which adjoins the stream. If A appropriated a certain quantity of water and has used it long enough to create title, no later comer has a right to take away any part of that which was properly appropriated by A, unless A permits him to do so for five years, which would cause the later comer to have a legal title to the water taken. If C is taking such a quantity of water as to diminish that which legally belongs to A, A should enjoin him at once before C's right ripens into a title.

Ditch Rights

If A is using water by consent of ditch man, can B, C or D tap ditch and thus diminish A's water? Can B, C or D obstruct ditch by allowing weeds to grow in their parts of the ditch so A is unable to get a flow? Must A patrol ditch from A to D to find and close gopher holes while A is using the water? Can either A, B, C or D bridge lateral in such manner and with such material as will materially diminish the flow? Can B, C or D cut off A's water when A is using it by consent of ditch man? What are the penalties?—Subscriber.

If the water company agreed to furnish you a certain quantity of water for a certain length of time, at a price, I think the water company would be liable to you in damages for a failure to furnish the water as agreed, and that your suit would be against them. I am obliged to assume the facts, as you do not state them, and therefore I cannot give you a definite answer, but, assuming that B, C and D have no rights in the ditch, except a right to receive water from it, it is not their province to keep the ditch clear, but it is the business of the company that owns the ditch, or if the ditch is on private ground, it is the business of the one who owns the ditch to keep it free of weeds. If he does not do so, and it is necessary, in order to get your quantity of water, to have it cleared, it would seem to me that the person from whom you are purchasing the water, if you are purchasing it, should stand the expense of cleaning the ditch. The same would apply to keeping the ditch free from gopher holes in order that you might receive your proper quantity of water. That would also apply to the bridge. If you have no contract with any water company or other owner of the water to whom you can look for liability in case of a breach of contract, I do not know to whom you would look for redress and could not tell you without receiving full details concerning the matter. It is possible that you have a lawsuit against B, C or D. You should go to some local attorney before whom you can lay the facts in detail.

—control
Red
Black
Purple
and other
SCALE
by
spraying
with
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The Most Efficient and
Cheapest Method

ZENO *is more efficient than fumigation* because it controls ALL the insects controlled by fumigation at one-third the cost and is effective against four times as many citrus pests, such as Scale, Red Spider, Silver Mites, Black Fungus or Smut, Lichens and other fungus on the bark. It leaves the tree in a thoroughly renovated, clean, healthy condition.

ZENO *is not an experiment* but has been used for controling pests on Citrus and Olive trees for the past five years. It is being used by the largest and most progressive growers in Southern California.

ZENO *is a perfect chemical compound* containing no free materials. Is not caustic and is safe and easy to use. Requires no agitation, mixing instantly with water, and remains in a perfect emulsion without separating in any way.

For Sale by
Producers' Supply Co., Los Angeles; Rialto Protective Association, Rialto; Kessler Brothers, El Cajon; Harry Highfield, La Mesa.
Or by the Manufacturers,
Standard Chemical Company
231 Franklin St., Oakland, Cal.
For information and demonstration in Southern California, address T. O. McClure, Hotel Hayward, Los Angeles.

Household Department

THE MODERN FARM

K. M. Bickel

"This farm aint what it used to be," sez Unkel Ezrie Fry,
"Somehow this modern way of things has sorter took my eye.
My oldest boy, a tractor's got, and writes stuff by the ream.
How one man does the work of five since he got that durned machine.

"Then Susan, she's my oldest girl, runs the dairy and its ilk.
She made the winter's milking pay with a silo I had built.
An' Jim, my youngest, is a dude, and allus was a fool,
But he sends me mighty good ideas from the new state 'aggie school?

"Then maw, she bought a gas engine, to help her if it could,
It runs the farm electric lights, and even saws the wood.
And little Bessie with her chicks, is mighty sure to win
The first prize at the county fair with her patent wooden hin.

"How many were the days I toiled beneath the beatin' sun,
And worried thru the winter, till these new inventions come,
But now I sit and read and smoke, it seems just like a dream,
I might have had this long ago, if I'd lived by gasoline."

—Nebraska Farm Magazine.

A WOMAN'S INTUITION

"There's nothing left but to kill Aunt Anna." The words were uttered in a low tone, but the voice was clear and carried well.

Miss Bartlett started; the train sped on; lights twinkled in the gathering darkness. Miss Bartlett saw nothing,—she scarcely breathed, waiting for what was to come.

There was a silence and then a woman's voice remonstrated. "But John, we can't—if the children ever learn—" The rest was lost in the roar of the train.

"They'll not miss her right away," the man went on, "and anyway their Thanksgiving can't be spoiled."

Miss Bartlett's blood almost froze in her veins as she pictured the trusting old aunt. She tried to think, had her ears deceived her? Could she possibly have misunderstood?

"When—when did you think of doing it?" the woman's voice broke in nervously.

"Right after supper, the sooner the better."

"How will you—"

"The hatchet, of course," the man interrupted impatiently. "You keep the children busy and I'll attend to it out behind the barn; everything'll be over in a few minutes."

Miss Bartlett grew faint and dizzy and the next words made her determine instantly to follow the couple no matter what danger was involved.

"It nearly kills me, John, to think of it; she's been such a good mother."

"I know and the children love her dearly, but what can we do? The money didn't come."

Just then the train slowed up.

"Crum Lynn, Crum Lynn!" sang out the brakeman.

The couple behind were rising, Miss Bartlett reached for her umbrella. She looked up as they passed. The woman was young, not more than 30, pale and worried looking; the man was shabbily dressed and a hard look about the mouth made Miss Bartlett all the firmer in her determination to frustrate his evil purpose.

In a moment, she found herself standing on the platform of a little country station. They were the only passengers who had alighted. The couple stood waiting for the train to pass, and then quickly crossed the railroad.

Miss Bartlett let them get well ahead until in the gloom she could barely discern their outlines, and hastened after.

A path led them to a macadamized road and trolley tracks indicated to Miss Bartlett that it was the Chester Pike. A five-minute walk and the two turned into a cross road. Miss Bartlett followed pantingly and in a little while stood before a low frame house. She saw a flash of light as the door opened and caught a glimpse of a tall bent figure, Aunt Anna no doubt, with three laughing, rollicking children about her. She heard the young woman say, "Have they been good children?" and then the door closed leaving her out in the chill November night.

The house stood on a corner, quite alone and surrounded by a picket fence. Miss Bartlett reconnoitered and some distance in the back, saw the barn behind which the monster had planned to carry out his frightful deed.

She shivered, the horror of the situation grew upon her. What could she do,—could she, a frail old woman battle with this beast? Perhaps her life would pay the penalty of her interference. There was no police. To break in upon the neighbors with such an incredible tale would bring forth only derision.

The ground was soft and moist, her shoes were wet through and her skirts draggled. Miles away in Chester, her sister and brother-in-law were probably enjoying their evening meal, and discussing her habitual carelessness in catching trains. Up and down she trudged in the darkness, her umbrella grasped firmly in her hand. A half hour might have passed when the sound of an opening door made her follow the road around to the side of the house.

A man came out the back door followed by a woman's figure carrying a lantern. From the halting manner of her walk, Miss Bartlett judged her to be Aunt Anna, whom she had seen at the open door with the children. They went through the yard and stopped before a small outhouse.

Miss Bartlett, her heart beating wildly, followed a little in the rear on the opposite side of the picket fence. The man went in, the woman holding the lantern high so as to light the interior. He soon came out and attended by the old woman went on to the barn.

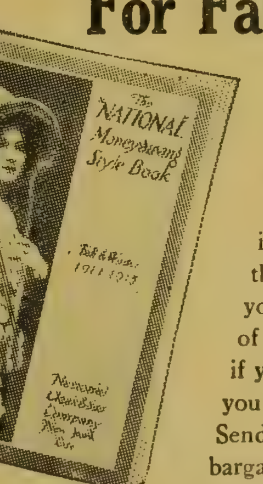
The time had come, Miss Bartlett thrust her umbrella against the palings and frantically tried to climb the fence. The pickets were sharp and pointed and close together. Again and again she essayed, only to slip back, her gloves torn and her arms scratched and bleeding from the splinters.

"O God," she moaned in her distress, "help me before it is too late!"

Summoning at length all her

Free—the New "NATIONAL"

Money-Saving Style Book For Fall and Winter



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Children's Dresses	.50 to 6.98
Children's Coats	2.98 to 6.98
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Infants' Dresses and Coats	.29 to 5.75

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We prepay postage and expressage on all our goods to all parts of the world. Every "NATIONAL" garment is sold under the "NATIONAL" Guarantee, which says that you may return any garment not satisfactory to you and we will refund your money and pay postage or express charges both ways.

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Ghirardelli's Ground Chocolate is the only original ground chocolate. It has been used in Western homes for over a third of a century and its popularity is growing day by day.

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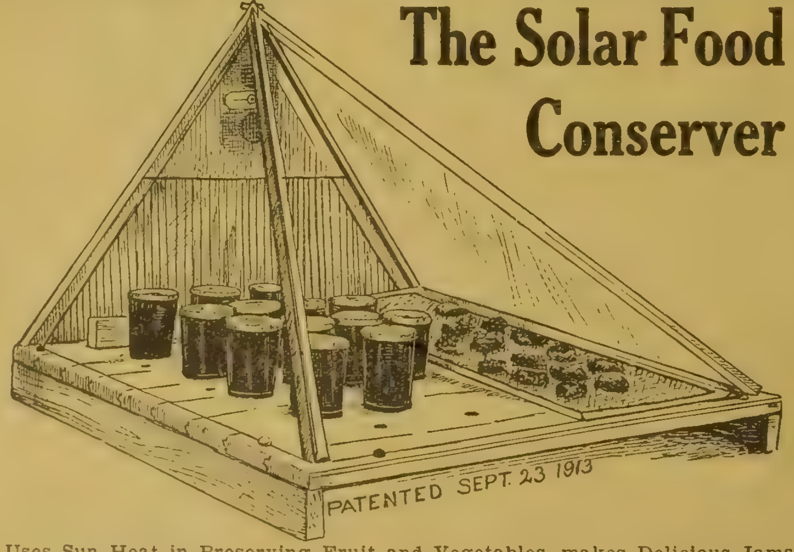
The Solar Food Conserver



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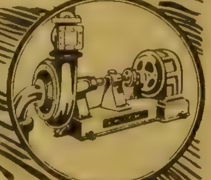
Reliable — efficient — economical — built for the best wells. 35 years as leaders. Booklet 78B about Horizontals and Verticals — and 82B about motor-driven pumps—are free.



Krogh Mfg. Co.
San Francisco - Los Angeles.

strength, she drew herself to the top and clung desperately with her hands and knees. In a final attempt, she threw her weight toward the inside and dropped over and down upon the oozy sod. Clambering to her feet, she felt for her umbrella, her only weapon, and splashed with mud, hair disheveled and face drawn in an agony of apprehension, ran in the direction the man and woman had taken.

As she turned the corner of the barn, she saw the man standing hatchet in one hand and gazing at the other in which hung blood-dripping, a headless hen.

The old woman held the lantern nearer.

"I'm afraid Aunt Anna is a very tough old bird, mother," remarked the man regretfully.

A sob burst from Miss Bartlett,—the pair looked up, astonishment manifested in their faces.

"Where—where can I get the trolley to Chester?" she faltered.—Farm, Stock & Home.

IDEAS FOR THE COOK

Written for the California Cultivator

By Isabel Cottle.

Breakfast

Baked Apples Cream
Breaded Calf's Liver, Bacon
Hashed Browned Potatoes
Hot Rolls Coffee

Lunch or Supper

Corn Chowder
Rice au Gratin
Buttered String Beans
Lettuce Hearts, French Dressing
Raisin Bread Baked Quinces
Tea or Milk

Dinner

Roast Loin of Veal
French Fried Potatoes
Boiled Cauliflower, Butter Sauce
Sweet Pickled Apples Nut Bread
Lemon Sherbet Little Pound Cakes
Coffee

Corn Chowder

Cut 10 cents' worth of salt pork into cubes and fry out in a saucepan. In this fat fry two medium-sized sliced onions until yellow, then add two raw potatoes sliced and cut in dice and the corn from one-half dozen ears, a pint of boiling water, salt and pepper to taste. Let simmer until the potatoes are tender, then add a pint of scalded milk which has been thickened by the addition of one tablespoon of butter rubbed into two tablespoons flour. Simmer for five minutes and serve.

Rice Au Gratin

Wash three-fourths cup of rice through several waters, drop into rapidly boiling salted water and cover. Continue boiling for 15 or 20 minutes, then remove cover and allow the water to gradually cook out, leaving rice dry and fluffy. Place in a baking pan, mix in lightly one cup grated cheese, one-half cup rich milk or cream and dot with butter. Bake until nicely browned.

Little Pound Cakes

One-third cup butter, one-half cup sugar, two egg yolks, one-half tablespoon milk, three-fourths cup flour, one-half teaspoon baking powder (level), one-fourth teaspoon mace, whites of two eggs beaten stiff. Cream butter, add sugar and beaten yolks of eggs in order, then the milk. Stir in gradually the flour, baking powder and mace, sifted together. Fold in beaten whites of eggs. Bake in small patty pans. Make frosting of the white of one egg, slightly beaten, and sufficient powdered sugar to spread nicely. Flavor. Spread on cakes and dust lightly with powdered chocolate.

Sweet Pickled Apples.

Select firm, well-flavored apples (Pearmains are good) cut through stem leaving skin on. Stick three cloves in each half of apple. Make a rich syrup allowing three pounds of sugar and a pint of vinegar to six pounds of apples. Put the apples in the syrup and simmer until they can be pierced with a straw. A few sticks of cinnamon may be added to the syrup if desired. Delicious served with meat.

The General says:-

The roof goes on last—but think of it first. It's the final protection for buildings. This label stands for 15 years of guaranteed service *at least*—when you buy

Certain-teed ROOFING

—and it means that the 3 biggest roofing mills in the world are behind the reliability of your purchase. There is no *test* by which you can judge roofing. The **Certain-teed** label is your protection.

Your dealer can furnish **Certain-teed** Roofing in rolls and shingles—made by the General Roofing Mfg. Co., *world's largest roofing manufacturers.* East St. Louis, Ill., Marseilles, Ill., York, Pa.

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THEY SOLVE THE HOME BUILDING PROBLEM

Fit the pieces—drive the nails yourself.

Your house comes ready to put up. Every piece numbered to fit accurately and securely—our plans contain the numbers.

We furnish everything—lumber, trim, finish, doors, windows, paint, stain, nails, hardware, plaster or interior wall board. "Follow our plans"—you can't go wrong.

The result—a permanent, substantial and attractive home—not a portable house. Satisfaction guaranteed. Your own ideas carried out, if preferred. Plans for any sized house. Send for illustrated catalogue. It shows how you can build your own home easily, quickly and economically. Write today.

Ready Built House Co., 974 Broadway, Portland, Ore.

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Send today for our big book with 70 liberal samples plain and fancy woolens, new fall styles all FREE. Through our special tailoring system and by selling direct—through no agents, stores or dealers—we are able to give values that absolutely cannot be duplicated.

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Packed in Air-Tight Packages
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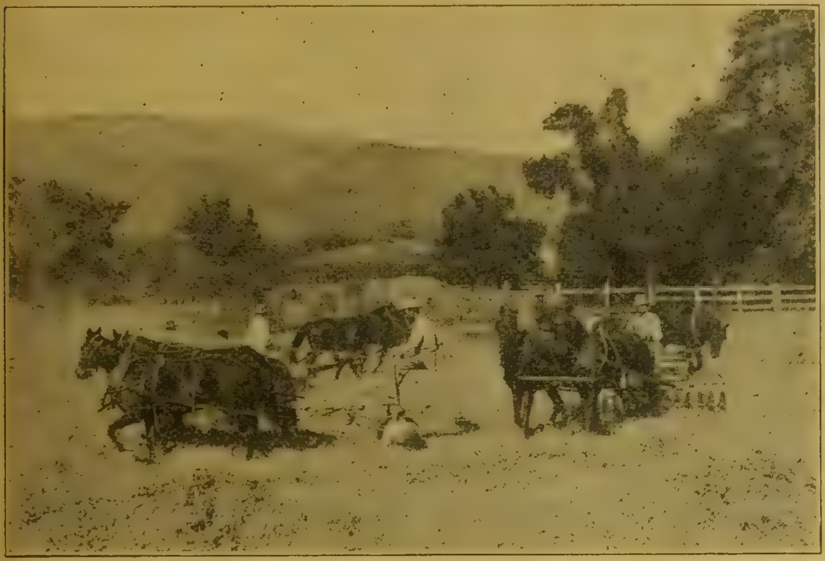
112-B MARKET STREET, SAN FRANCISCO, CAL.

Prize Photos for September

We certainly have had a difficult task in choosing the prize winners from the great number of photographs which were sent. There were 42 in all, and every one was good. Many, however, did not have all the requirements for making good engravings, so could not be chosen, but more than a score, besides these which are printed, have been laid aside and will be used in some later Cultivator, and with the engraving will go the name of the photographer and of the locality in which the photo was taken. The list of those who have submitted photographs is as follows: U. Marks, Pasadena, beautiful little studies in dogs, one of especial excellence, showing dogs perched on back of donkey; F. A. Baumgartel, Anaheim; Mrs. Jesse F. Williams, Coalinga, sends photos of "Baby Ruth and Two Little Kids"; M. Haines, Carpinteria, dog and kittens; Elma Owens, Madera, hundreds of young chickens taken at the university farm; H. J. Alstrom, a field of oats with history,. which we surely will give later; Mrs. R. J. Fuller, Fairmead, a round-up and a lot of excellent scenes; Homer J. Coffman, Laton, family cow and others, every one clear and sharp; Mr. W. J. Arundel, "Two to Milk One Cow"; Englewood Orchard, Campbell, string of eight horses, "We Don't Want an Eight-Hour Law," and they show it by their willing expression; Mrs. Sarah Holyland, Santa Ana, waterfowl; Mrs. D. M. McPherson, Los Angeles, "The Coming Farmer"; Mr. J. B. Morrow, Upland, "Helping Daddy Fix the Cultivator."

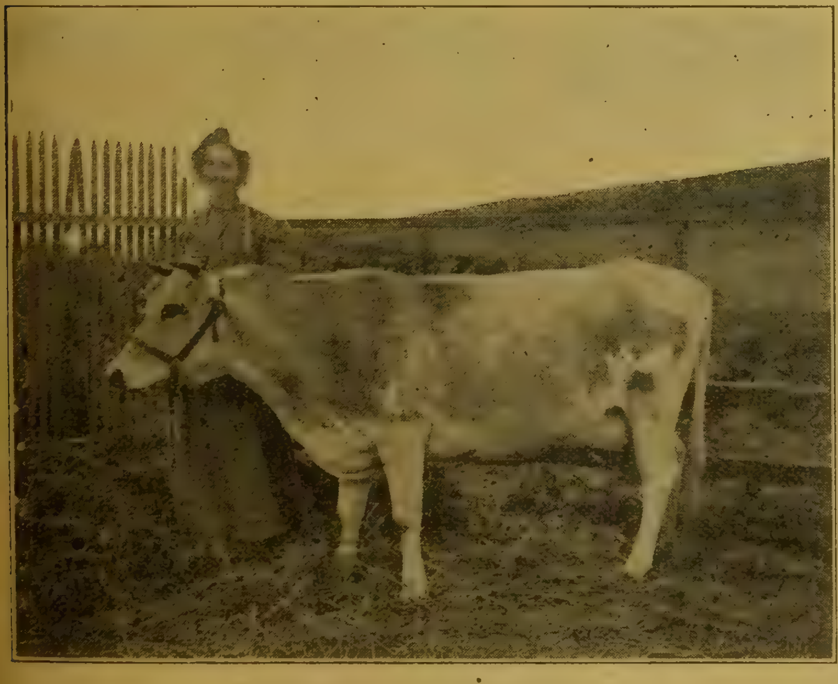
The best part of making photos of home life and animal life about the farm is that their value increases as the years go by. The expense is not great compared with the pleasure they give. If any of our subscribers have problems regarding which they wish help we will be glad to submit them to thoroughly qualified photographers who will give suggestions.



Old Time Way of Threshing Beans

First Prize Photo by Geo. G. McLean, Carpinteria.

Making pleasing photographs of animals is often very difficult, but far better results may be secured by those with whom the animals are familiar than by the strange photographer, no matter how much better technical results he may secure. One of the best examples of this is in a whole stepladder full of cats—photos taken by Mr. McLean—which is in this collection, and which we will use in a later Cultivator.



The Family Cow as a Regular Pet

Second Prize Photo by F. E. Kelly, Burnett.

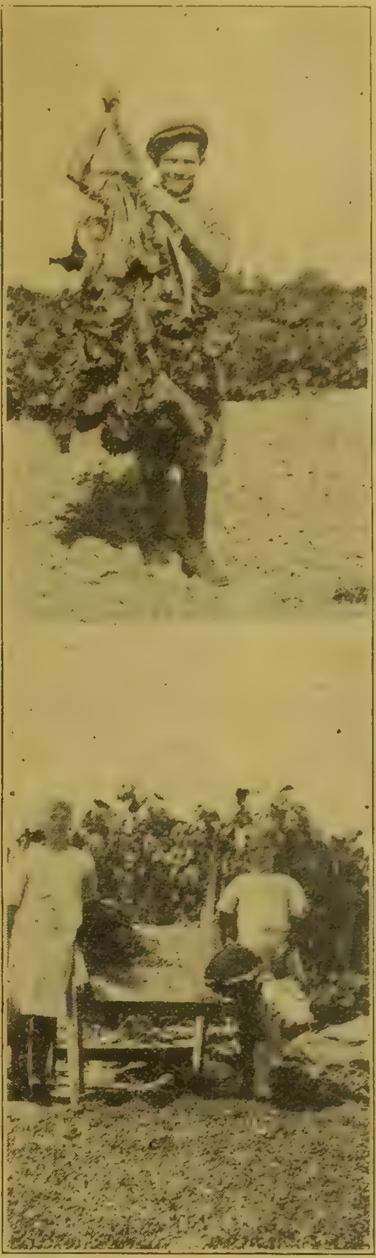
For next month we will want contesting photos in our hands by the morning of Sept. 24. That leaves lots of time for good work. But don't delay too long the sending.

The prizes will be the same—$2.00 and $1.00 for first and second—and in addition the next five will receive one year's subscription to the Cultivator. All photos submitted to be the property of the Cultivator.

A meal well chatted is half digested.

DOLLARS FOR YOUR THOUGHTS PAID IN CASH.

Did you ever start out for a happy ride, stowed away in the tonneau with the baby's go-cart whacking your shins, the lunch basket resting on your left foot and a heterogeneous mass of wraps and cushions pinning you in? If you have you will appreciate the suggestions received from a friend's friend who has a catchall in her car.



Not Prize Winners, But Excellent Photographs

The photo at top by Miss D. Lucas, Visalia, shows that Tulare County produces some sugar beets. The lower photo by Mrs. C. C. Heidt of Gilroy shows one branch of farming which is not very general in California. But sunflower seed are now regularly quoted on the market, and we doubt not there is some profit in growing this crop.

An Auto Comfort.

It is one of those simple inventions

(Continued on Page 239.)

FREE

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In large or small quantities. 40 species to select from. Write for free pamphlet, "Eucalyptus Culture." It tells you how to sow the seed, raise the plants and plant out in the field. Also describes all the leading kinds, gives their uses, etc.

Trial packets 15c each, 4 for 50c. Write for prices in quantity.

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IN GRAY DRUMS WITH BLUE BANDS

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The cheerful housewife in every one of these acetylene lighted homes will tell you that her lights have banished forever the gloom of kerosene lamps, and all the labor and drudgery their use entailed. She will tell you also of the delights of cooking on an acetylene range in a cool kitchen—with no bother of kindling, coal, ashes or soot. There are now no less than a quarter of a million families using home-made acetylene for both lighting and cooking. In every case the gas producing stone—UNION CARBIDE—is ordered direct from the nearest of our warehouses, located all over the country. In the drums in which we ship UNION CARBIDE it is as safe to store and handle as common coal. It won't burn and can't explode. The little machines which automatically release the gas from the Carbide are called acetylene generators. The newer models are so wonderfully simple and perfectly reliable—they work with no attention other than filling once a month.

We will be glad to mail our advertising literature which we are sure you will find intensely interesting. Address

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San Francisco--Los Angeles Produce Markets

Los Angeles Market

LOS ANGELES, September 2, 1914.

The prices given below, except where otherwise noted, are those made by wholesale or commission houses to retailers, and are intended to give producers the range of the market rather than an indication of prices which they will secure. Jobbers' quotations to producers are not given.

BUTTER

Butter began advancing during the last days of last week and all grades took a half cent further advance on Monday. Arrivals, nearly 60,000 pounds daily. Most stock is local, very little Eastern arriving.

Prices to trade 4 cents above following quotations:

Creamery Extras	.29
Firsts	.26
Country	.22
Ladle	.21

CHEESE

Prices to trade 1 and 2 cents higher:

Eastern Daisy	.19
California Fresh	14½@15
Domestic Swiss	19@20
Imported Swiss	.40
Longhorn	19@20
Oregon Triplets	18@18½

EGGS AND POULTRY

Receipts of locals very light, some days running less than 200 cases. Northerns have almost ceased to come and the few in stock have been marked up. Very few Eastern eggs came in during last week. Last year at this date Easterns were arriving freely.

Prices to trade 3 cents higher than following quotations:

Fresh ranch, case counts	.34
Candled	36@37
Northern Case Count	35½
Petaluma-Santa Rosa	36½

Price to producer:

Hens, lb.	13@18
Roosters	.8
Broilers, lb.	.17
Fryers	.15
Roasters, lb.	.15
Turkeys	18@26
Ducks	.12
Geese	.14
Squabs, doz.	2.00

LIVE STOCK

The following quotations are f. o. b. Los Angeles on all stock:

Hogs, 175 to 200 lbs., per cwt	10.25@10.50
Prime Steers	7¼@7½
Heifers	6¼@6½
Calves, lb.	8½
Sheep—	
Ewes, head	4.00
Wethers	4.25@5.00
Lambs, head	4.50@4.75

POTATOES

Wholesale selling price:

Sweets, sack	2.00
Northern Burbanks, cwt.	1.45@1.50
Shimas	1.55@1.60
Lompocs	2.10@2.15

ONIONS

Wholesale selling price:

Australian Brown, cwt.	1.15@1.25
Silverskins, cwt.	2.00@2.25
Yellow Danvers, sack	1.15@1.25
Garlic	16@17

VEGETABLES

Wholesale selling price:

Artichokes, Northern, doz.	90@1.00
Beets, doz.	30@35
Beans, String	3@4
Lima	3@4½
Cabbage	.75
Carrots, doz.	30@35
Cauliflower, doz.	1.25@1.35
Celery, doz.	50@60
Corn, Sugar, box	50@60
Field corn, sack	1.50@1.60
Cucumbers, lug	35@45
Pickling, lug	1.10@1.35
Egg Plant	4@5
Escarole, doz.	.40
Horseradish, lb.	.12
Leeks, doz.	35@40
Lettuce, crate	75@85
Mint, doz.	.40
Okra, lb.	6-7
Onions, Green, doz. bunches	15@20
Oyster Plant	25@30
Parsnips, doz.	25@30
Peas, lb.	4@6
Peppers—	
Bell, lb.	5@6
Chili, lb.	2½@3
Radish, doz.	20@25
Rhubarb	80@1.25
Spinach, doz.	.20
Squash—	
Summer, lug	30@35
Crookneck	25@35
Hubbard, lb.	2½@3
Turnips	30@35
Tomatoes, lug	35@50

FRESH FRUIT

Wholesale selling price:

Apples,	
Bellflowers	75@1.05
Gravensteins	75@1.10
Jonathans	1.35@1.50
Skinners' Seedlings	85@1.10
Crabapples	90@1.25
Bananas	3½@4
Berries—	
Strawberries, basket	3@4
Raspberries, basket	7@8
Blackberries, basket	3@4
Cantaloupes—	
Locals, small	1.15@1.35
Locals, large	1.75@2.00
Casabas, doz.	65@1.00
Figs, 1-layer box	60@70
Grapes—	
Cornichon	1.00@1.25
Black, crate	1.35@1.50
Malagas, crate	75@85
Muscatels, lug	60@70
Isabella, crate	1.00
Tokays, crate	1.00@1.25
Nectarines, lug	1.00@1.25
Peaches, lug	50@90
Pears, Bartlett, lug	1.20@1.25
Seckel	75@85
Pineapples, lb.	5½@6½
Plums, lug	90@1.35
Quinces	75@80
Watermelons, lb.	1@1½

CITRUS FRUIT

Wholesale selling price:

Lemons	3.75@6.85
Grapefruit, Seedless	2.25@2.50
Valencias	1.75@2.50
Limes, basket	1.50

DRIED FRUITS

Wholesale prices to retailers are:

Evaporated Apples, Fancy., lb. bxs.	7½@10½
Apricots	9¼@11
Nectarines	12½
Peaches	6½@7½
Pears	8@12
Prunes	6@17
Plums	.10

NUTS

Prices named by California Walnut Growers' Association are:

No. 1	17½
Budded Walnuts	.21
No. 1 Soft Shell Walnuts	.16
No. 1 Hard Shell Walnuts	15½
No. Twos	11½

Wholesale price:

Almonds—	
I X L	22@23
N P U	21@21½
Drakes, Thin Shells	18@19
Pecans	.16
Peanuts—	
California, Raw	.6
Japan	7½
Eastern	7½
Rice Corn	5.00@5.25

HONEY

Wholesale selling price:

Comb, Fancy, Water White	.15
White	.13
Light Amber	.12
Extr. Water White	.8
White	7½
Light Amber	.7
Beeswax	.30

BEANS

Wholesale selling price:

Producer's price not far from one dollar under these quotations:

Limas	8.00@8.25
Lady Washington	5.60@5.70
Black Eyes	8.00@8.50
Pinks	5.75@5.85
Lentils	8.00@10.00
Small White	6.50@6.75
Garbanzos	8.00@8.50

RICE

Wholesale selling price:

California	5.00
Broken	4.00

HAY

Buying prices f. o. b. cars Los Angeles:

Barley	10.00@11.00
Wheat Hay	10.00@11.00
Tame Oat	11.00@13.00
Alfalfa	9.00@11.00

GRAIN

Wholesale selling prices f. o. b. Los Angeles:

Corn, Yellow	2.20
Corn, White	2.30
Wheat	2.00
Oats, Red	2.35
Oats, White	1.65
Kaffir Corn	1.90
Millet	3.75
Popcorn	4.75@5.00
Egyptian Corn	2.30
Barley Seed	1.45
Milo Maize	2.00
Cal. Seed Oats	2.25
Sunflower Seed	5.25@5.35

FEED STUFF

Wholesale selling prices f. o. b. Los Angeles:

Bran, Heavy	1.75
Alfalfa Meal	1.05
Alfalfa Syrup, per cwt.	1.05
Beef Scraps	3.00@3.10
Beet Pulp	1.25
Cracked Corn, cwt.	2.20
Cracked Wheat, cwt.	2.15
Cotton Seed Meal	1.85
Blood Meal	3.60@3.70
Bone Meal	2.00@2.10
Bone Green	1.95@2.05
Charcoal	1.90@2.00
Cracked Wheat, cwt.	2.10
Oil Cake Meal	2.05
Fish Meal	3.15@3.25
Rolled Oats	1.70
Rolled Barley	1.30
Middlings	2.00
Oat and Wheat Middlings	1.55

San Francisco Market

SAN FRANCISCO, September 1, 1914.

The prices given below, except where otherwise noted, are those made by wholesale or commission houses to retailers, and are intended to give producers the range of the market rather than an indication of prices which they will secure. Jobbers' quotations to producers are not given.

BUTTER

Almost every day has seen an advance in butter since the last quotations. Some extra fine stock has changed hands at a shade above quotations given. Arrivals about 90,000 pounds daily.

Prices to trade 4 cents above following quotations:

Extras	31½
Frime Firsts	.27
Firsts	.25
Seconds	.24

CHEESE

Wholesaler to retailer.

California Y, American	14½@15
California Flats	10½@14
Cheddar	.20
Oregon Twins	15½

EGGS AND POULTRY

The egg market is very strong. Chinese stock not arriving. The week shows an advance of one cent only on fancy stock.

Prices to trade 3 cents higher than following quotations:

Extras	35½
Firsts	.30
Select Pullets, lb.	.29
Storage, extra	.30
Hens	15@18
Fryers	20@21
Roosters, old	.12
Roosters, young	22@23
Broilers	18@20
Belgian Hares, lb.	10@13

LIVE STOCK

San Francisco prices, gross weight:

Steers	4@7
Cows and Heifers	3@6¼
Calves, lb., live weight	6@9
Hogs	9@9¾
Wethers	5@5½
Ewes	4½@5
Milk Lambs	6½@6¾

POTATOES

Wholesale selling price:

Delta Burbanks	75@1.00
Sweets, cwt.	1.50@1.65

ONIONS

Wholesale selling price:

Yellow, sack	40@65
Garlic, new	10@15

VEGETABLES

Wholesale selling price:

Beans—	
Limas, lb.	2@2½
Wax, lb.	1@2
Strings	1@2
Cabbage, cwt.	1.00@1.25
Carrots, sack	35@50
Celery, doz.	30@40
Corn, Green, sack	75@1.00
Cucumbers, lug	20@30
Egg Plant, lug	35@50
Peas, lb.	2@3
Peppers—	
Bell, lug	25@35
Chili, lug	20@30
Rhubarb, box	60@1.00
Tomatoes, lug	30@50

FRESH FRUIT

Wholesale selling price:

Apples—	
Alexander	50@75
Gravensteins	75@1.00
Bellflowers	75@90
Crabapples	40@85
Blackberries, chest	75@1.75
Bananas, Hawaiian, bunch	1.25@1.75
Cantaloupes, crate	50@60
Delta, lug	25@30
Casabas	50@75
Figs—	
Black, double layer	40@60
White, box, single layer	20@40
Grapes—	
Black	25@50
Tokay	50@65
Seedless	50@60
Malagas	40@60
Muscats	50@65
Huckleberries, lb.	8@12½
Nectarines, crate	75@1.00
Peaches, crate	25@85
Lugs	40@60
Pears, box	65@1.00
Large, wrapped	1.00@1.50
Canners, ton	17.00@25.00
Plums, crate	75@1.00
Lug	75@1.25
Pineapples, Hawaiian, doz.	1.50@2.00
Prunes, crate	75@1.25
Quinces, box	75@1.00
Blackberries, chest	1.50@3.00
Huckleberries, lb.	8@10
Raspberries, chest	5.00@9.00
Strawberries, chest	1.50@3.00
Watermelons, doz.	75@1.50

CITRUS FRUIT

Wholesale selling price:

Grapefruit, Seedless	1.00@2.50
Lemons	7.50@8.00
Lemonettes	5.00@6.50
Limes, cs.	4.25@4.50
Valencias	1.75@2.50

DRIED FRUITS

Wholesale prices are:

Prunes—1913 crop, bulk basis: 30s-40s, 7c; 40-50s, 7c; 50-60s, 7c; 60-70s, 7c; 70-80s, 7c; 80-90s, 5¾c; 90-100s, 5½c. The above are for both Santa Clara and outside; 1912 crop worth practically as much as the new crop: 20-30s, 15c in 25-lb. boxes.

Other Fruits. 50-lb. Boxes—	Standard	Ch.	Extra Ch.	Fcy.
Evap. Apples	....	9 c	9½c	10c
Peaches	....	5 c	5¼	6c
Pears	8½c	9 c	10 c	.....

RAISINS

The Association has named prices on London layers as given below. Other prices will be named later. Confirmation will only be made subject to pack, especially with reference to time of shipment: 3-crown London layers, 20-lb. boxes, 1.30; 4-crown clusters, 20-lb. boxes, 1.60; 5-crown Dehesa clusters, 20-lb. boxes, 2.25; 6-crown Imperial clusters, 20-lb. boxes, 2.75; 5-lb. boxes, 50c additional; 10-lb. boxes, 25c additional; fancy clusters, 1-lb. cartons, 20 to case, 1.70; fancy clusters, 2-lb. cartons, 12 to case, 2.10; fancy clusters, 5-lb. cardboard cartons, 4 to case, 2.25; bulk layers in 50-lb. boxes, 2.75. Prices guaranteed against decline to January 1st, 1915, and are subject to change without notice.

NUTS

Wholesale selling price:

Peanuts—	
Unpolished	5@6
Polished	6@6½
Japanese, Shelled	6¼@6¾
Italian Chestnuts	6½@7

BEANS

Wholesale selling price:

Limas	7.50
Pink	4.50@4.75
Black Eyes	6.25@6.50
Cranberry	5.50@5.75
Small white	5.50@6.00
Garbanzos	5.00@5.50
Large white	4.75@5.00
Bayou	5.00@5.50
Manchurian Speckled Bayous	4.40@4.60
Manchurian Butters	4.60@4.80
Manchurian Cranberry	4.00@4.25
Red Mexican	5.25
Horse Beans	1.90@2.00

HONEY

Comb, Water White	14@16
Amber	10@12
Dark	7@10
Extracted White	7@9
Light Amber	6½
Dark	4@5½
Beeswax	27@32

HOPS

1913

Sacramento Valley	14@15
Sonoma-Mendocino	15@16
Oregon Clusters	14½@16
1914 Contracts	15@16

HAY

Under date of August 29 Scott, Magner & Miller say:

Receipts of hay for the past week, 5397 tons. Most of these large receipts are the medium and poorer grades. The percentage of fancy hay arriving is very small and meets with quite ready sale. Alfalfa from the river districts is arriving in greater quantities, and although a little of this is moving yet there is not enough demand to take care of the arrivals.

Fancy Wheat Hay, lt. bales	11.00@12.00
No. 1 Wheat or Wheat and Oat	8.00@9.00
No. 2 Wheat or Wheat and Oat	6.00@7.50
Choice Tame Oat	10.00@11.00
Other Tame Oat	7.00@9.00
Barley	6.00@8.00
Wild Oat	6.00@8.00
Alfalfa	6.00@9.00
Stock Hay	4.50@5.00
Straw, new	30@45

GRAIN

Wheat, Cal. Club	1.70
Corn, Eastern Yellow, blk.	1.90@1.91¼

WEATHER CONDITIONS

For week ending Saturday, August 29, 1914.

Report from the various stations of the U. S. Weather Bureau, by Geo. H. Wilson, director, San Francisco:

	Rainfall Data			Temperature Data.	
	Past Week.	Seasonal to Date.	Normal to Date.	Maximum.	Minimum.
Eureka	.00	.01	.19	56	50
Red Bluff	.00	T	.00	96	58
Sacramento	.00	.00	.00	86	52
San Francisco	.00	.02	.01	64	50
San Jose	.00	.00	.04	76	54
Fresno	.00	T	.00	98	56
Independence	.00	.16*	.00	90	54
San Luis Obispo	.00	T	.03	74	52
Los Angeles	.00	.01	.00	78	56
San Diego	.00	.00	.00	72	60

*Of this amount .10, not previously reported, fell July 19-20.

Barley, Feed	1.12½@1.20
Oats, red	1.27½@1.35
Sunflower	5@5½

FEED STUFF	
Alfalfa Meal, car lots	11.50@12.50
Bran, ton	27.00@28.00
Feed Cornmeal, ton	42.00
Cracked Corn	42.00
Rolled Barley, ton	23.00@24.00
Rolled Oats, ton	37.00@37.50
Middlings	32.00@34.00
Shorts	28.00@30.00
Oilcake Meal	32.00@33.50
Cocoanut Oilcake Meal	25.00@26.00
Linseed Oilcake Meal	27.00@28.00

Citrus Fruit Market

LOS ANGELES, September 2, 1914.

There are still 3500 cars, perhaps more, of Valencias yet to go forward. A couple of weeks ago growers became concerned because of heavy dropping of fruit and very heavy shipments went forward. This has demoralized the market, and until the large number now on track are disposed of a very weak condition will prevail. The situation is further complicated by immense quantities of peaches and other fruits filling eastern markets. The lemon market is even worse; the enormous speculative prices which were put upon the fruit at the beginning of the war stopped consumption and now Mediterranean countries are shipping in even larger quantities than usual. At the present time there are 100,000 boxes afloat to arrive within a few days. In a sale in New York yesterday over 100 boxes of Mediterranean fruit sold at $1.55. These figures are in material contrast to the speculator's prices, to which they had forced lemons a few days ago, of $10 and $12.

Shipments.

Shipments of oranges from Southern California to date since November 1, 1914, 35,662; lemons, 2,668; total, 38,333. To same date last season, oranges, 12,809; lemons, 2,053; total, 14,862. Total of citrus fruits two years ago this date, 33,497.

NEW YORK, Aug. 31.—Twenty cars Valencias, one car Valencias and grapefruit sold, also one plain oranges and one car lemons sold. Market is slightly better on Valencias. Weather fair and warm.

VALENCIAS—	Avge.
Swastika, L. V. W. Brown	$1.95
Modjeska, xf.	3.30
Modjeska, fy.	2.80
Bell, C. M. Brown	2.45
Arch, Hawarden, C. A.	1.55
Niagara, Stewart F. Co.	2.50
Symbol, Stewart F. Co.	2.20
Old Mission, fy., Chapman	2.75
Golden Eagle, fy., Chapman	2.10
Rialto Brownie, Rialto F. Co.	2.15
Champion, Denman Sons	2.35
Seal Rock	2.05
San Rafael	2.30
Tesoro Blue	2.85
Tesoro Red	2.55
Sappho, Amer. F. Dis	1.70
Jupiter, Amer. F. Dis	1.50
Wm. Tell, O. R. Exchange	2.95
Golden Beaver, O. R. Exchange	2.50
Glendora Heights, xf., A. C. G. Ex.	3.35
Glendora Heights, Foothill	2.75
Evolution, A. C. G. Exchange	2.25
Kenilworth, A. H., Riverside	2.90
Kenilworth, marked T.	2.65
Peasant, A. H. Exchange	2.40
Peasant, marked T.	2.25
Dandy, A. H., Riverside	1.85
Charter Oak, A. C. G. Exchange	3.20
Red Riding Hood, S. D. Exchange	2.55
Iva	1.85
Mother Colony, S. T., Anaheim	2.70
Carnival, O. K. Exchange	2.35
Apex, O. K. Rivera	2.50
Majesty, O. K. Exchange	2.00
Golden Rule, Riverside Exchange	2.65
Golden, Riverside Exchange	2.10
GRAPEFRUIT—	
Glendora Heights (seedling)	$2.15
Peasant	1.05
Squirrel (seedless)	1.60
Prairie Chicken (seedless)	1.20
Spanish Girl (seedless)	1.00
GRAPEFRUIT—HALVES	
Mahala	$1.40
Mahala	1.10
Champion	.70
Squirrel (seedless)	1.00
Prairie Chicken	.70
LEMONS—	
Aerolus	$5.55
Crocus	4.85

PITTSBURGH, Aug. 31.—Four cars oranges sold. Warm.

VALENCIAS—	Avge.
Banana Belt, O. R., Villa P.	$1.65
Maltese, D. M., Monrovia	2.50
Echo, S. T., Arroyo P.	2.55
Cougar, Covina Exchange	2.20
Anoakia, D. M., Monrovia	2.15
Arroyo, S. T., Arroyo Park	2.25

CINCINNATI, Aug. 31.—Warm. Market weak on small sizes oranges—weak on poor quality lemons. Two cars oranges, one car lemons, sold.

VALENCIAS—	Avge.
Glendora Home, A. C. G., Glendora	$2.15
Green Crown, A. C. G., Azusa	2.30
Hunter, A. C. G., Glendora	1.35
LEMONS—	
Fountain, V. C., Kevit	$3.00
Pitcher	1.50

ST. LOUIS, Aug. 31.—Cloudy, cool. Market is easier. Three cars Valencias sold.

VALENCIAS—	Avge.
Hunter, A. C. G., Glendora	$2.20
S. S., O. R., Orange	2.20
Pronto	2.25
Cardinal, O. R., Orange	2.40
Titus	2.45

CLEVELAND, Aug. 31.—Three cars Valencias, one car lemons sold. Market is unchanged on Valencias; lower lemons. Warm.

VALENCIAS—	Avge.
Echo, S. T., Pasadena	$2.10
Lochinvar, R. H., E. High	1.25
Canyon, A. C. G., Lamanda Park	1.65
Arroyo, S. T., Pasadena	1.55
Trail, A. C. G., Lamanda Park	2.10
LEMONS—	
Pet. S. D., San Dimas	$4.15
Greyhound	3.25

One car Messina lemons averaged $2.55.

PHILADELPHIA, Aug. 31.—Six cars sold. Hot. Market is steady.

VALENCIAS—	Avge.
Flyer, O. K., Cucamonga	$1.80
Carmencita, S. T., Placentia	2.85
Mission Play, San Marino Grow	2.70
E. Molino, San Marino Growers	2.25
Marion	1.50
Green Crown, A. C. G., Azusa	2.00
Colombo, S. T., Placentia	2.50
Titus Ranch, San Marino Growers	2.40
Marion, fy.	1.80

BOSTON, Aug. 31.—Twelve cars oranges sold. Clear and warm. Market is doing better.

VALENCIAS—	Avge.
Violet, D. M. Duarte	$2.30
Carmencita, S. T., Fullerton	2.70
Stag., A. C. G., Azusa	2.75
Hunter., A. C. G., Azusa	1.55
Lochinvar, R. H., E. High	2.00
Hunter, A. C. G., Riverside	2.15
Clendora Alps, A. C. G., Glendora	3.05
Hunter, A. C. G., Glendora	1.55
Jasmine, D. M., Duarte	2.80
Colombo, S. T., Fullerton	2.85
Pointer, A. C. G., Azusa	2.15
Gold Buckle, R. H., E. High	2.25
Kenilworth, A. H., Riverside	2.65
Dandy, A. H., Riverside	1.60
Glendora Home, A. C. G., Glen.	2.10
Orchard, National O. Co.	2.00
Sappho, Amer. F. Dis	1.85
GRAPEFRUIT—	
Kenilworth	$1.60
Peasant	.85
Orchard (halves)	1.05

SUMMER FALLOW

Referring to the cover crop issue of the Cultivator of August 13, an Eldorado County farmer writes:

"I notice in the Cultivator of August 13 the statement that summer fallow is sure death to soils in California. I don't think the party that wrote that has done much farming. I was born and raised on a farm in Eldorado County and have lived on a farm all my life, and I have always found that if I don't summer fallow I don't raise any crop, that is on the grain land; the garden I manure from the barnyard, but if a farmer tries to manure from 100 to 1000 acres it would be quite a job; besides it would take all the manure in the state. To raise a good crop start to summer fallow the first of March. Plow about six inches deep, and the rougher it turns up the better so the sun can get in and burn out the soil. Cross harrow in August or September to level it off; put in the grain before the rains come, and you are sure of a good crop. This humus that Mr. Doty speaks of is the manure or decaying vegetation that is turned under, and without it the soil can't produce, but if the soil is turned over winter after winter with no spring plowing it will get in such condition that it won't raise a healthy weed and will turn to putty, all run together. Manuring the ground is all right, but if a farmer has 500 to 1000 acres to put to grain, it is impossible to manure it all; summer fallowing does just as well."

As to many soils requiring summer fallowing in order to produce grain there can be no question, but this is because these soils have had the humus burned out of them by summer fallowing and they must now be summer fallowed to produce another crop. We think our subscriber's contention only proves the statement formerly made in the Cultivator. As he says, these acres cannot be manured, but ultimately some one must take hold of them and build them up or even summer fallowing will not save them. This, we believe, is true of any country, but more especially arid countries where the summer heat is great. In California's interior valleys summer fallowing destroys soils with fearful rapidity. Rotation and deeper plowing should save this land for a crop every year.

DOLLARS FOR YOUR THOUGHTS

(Continued from Page 237.)

that are the blessing of mankind. It is merely a stout khaki bag the length of the robe rod on the back of the front seat, and its width is the distance from the rail to the floor of the tonneau. A stout rod—a broomstick will do—is run through the upper hem at the back of the bag to hold it in place. This rod of course should be the length of the robe rod. The bag is furnished by a cover flap and attached to the bar by four khaki ties, one at each end of the rod and two in the middle.

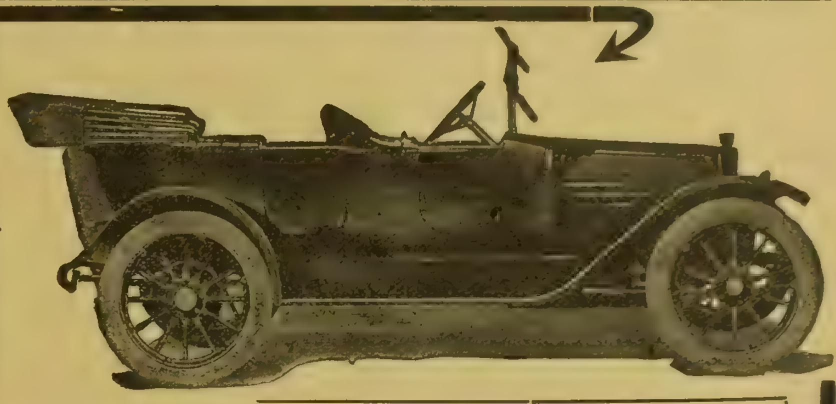
Into this capacious bag are packed away the many necessaries for an all-day ride. It's amazing what capacity that bag has, and it is a wonderful comfort to know that every thing is "together" and easily get-at-able.

Suggestions Wanted.

What similar comfort do you make use of in your car or know of that somebody else uses? For the best suggestion the Cultivator will give $2.00 in cash; for the second best, $1.00. These to be printed in our issue of September 17. That is short notice, isn't it? But usually it is easier to do things when we first think of them. All suggestions must be in the office of the California Cultivator, Los Angeles, by September 11. Rush them in.

This prize feature will be continued each month. Watch for offers. Also if you have suggestions for topics, send them in. If there is anything you are particularly interested in or wish to have new ideas upon, let us know, and we will start the idea rolling among the thousands of Cultivator subscribers. And that will bring valuable suggestions, you may be sure.

Keep your head cool and your heart warm. The one who lets his head get hot and his heart cold is in a bad way.—Backbone.



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CRESCENT SPECIFICATIONS, 6-Cylinder Model 6-60

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TIRES—35 x 4½, demountable.
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IGNITION—High tension.
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CLEARANCE—10 inches.
HORN—Electric.
SPEEDOMETER—60 mile flush type. Warner.
WIND SHIELD—Clear vision, rain vision and ventilating.
TOP—Mohair, with dust hood and quick-acting curtains.
TRIMMINGS—Black and nickel.
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This model is built either in five-passenger touring car or roadster.

Specifications for Crescent "Four" Practically Same as "Six." Send for Literature and Prices

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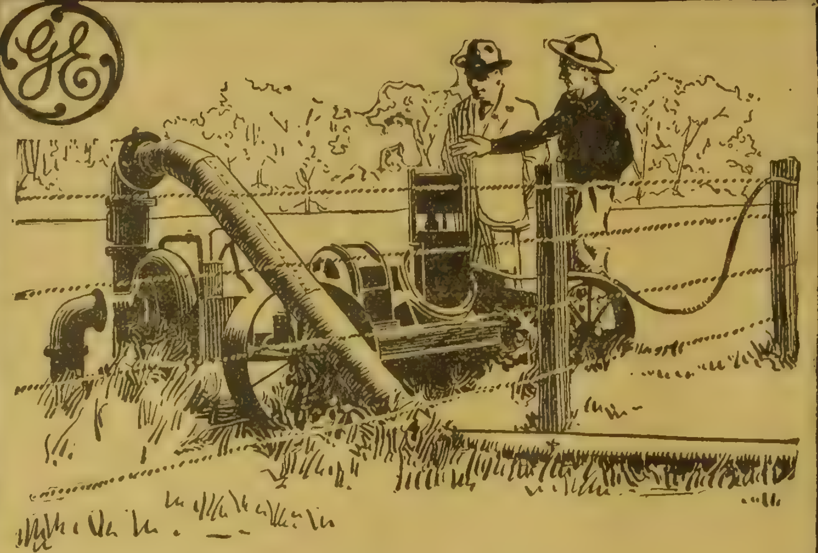

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This picture shows one application of the portable motor outfit on the Patterson Ranch at Newark, Cal. Mr. Patterson pumped from seven different wells last season—all under varying conditions of head, the motor having worked continuously without a moment's trouble.

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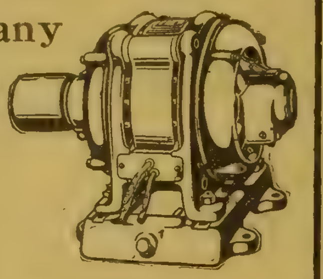

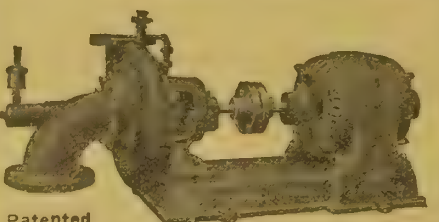

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It is absolutely noiseless and has neither pistons, valves or gears to get out of order.

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Jackson "1912" Direct Connected Pump.

Every Byron Jackson Centrifugal Pump is designed to operate continuously under various conditions.

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We furnish these pumps for one horse power up.

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IMPROVED POWERS COMBINED BORING AND DRILLING MACHINE

Bores thru gravel, sand and clay like a streak of lightning. If rock is struck it drills thru that. Forces casings perperfectly. One man and one team can run it. You can make $1 an hour for your spare time.

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The Sperry booklet, "Make Hens Happy," has been compiled by men who know the essentials of a perfectly balanced chicken feed. It tells what ingredients a feed must contain to make chickens lay.

You know that chickens, like any stock, to be healthy and strong, must have the right kind of feed, composed of the right food elements. An excess of any one kind of feed means a lack of some other important element the chicken needs for egg production, consequently there is more or less degree of starvation, even though your hens seem to be getting enough to eat.

SURELAY
BALANCED EGG FOOD

is composed of the very elements that the egg is composed of. Every sack of Surelay shows just what its food content is.

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"Make Hens Happy" is full of vital, valuable, profit-bringing facts. Send for it today—just sign your name to the coupon attached and mail it.

Partial List of Contents in Sperry Book, "Make Hens Happy"

- The Business of Poultry Raising.
- How California Chickens Supply More Than Three Times Their Value in Eggs.
- Why the Pacific Coast Does Not Produce More Chickens and Eggs.
- The Most Ideal Climate for Raising Chickens at a Profit.
- A Perfectly Balanced Ration for Chickens.
- How It Is Made.
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- Some Vital Points for Feeding Chickens.
- What Well-Bred Chickens Will Do.
- Exercise for Chickens.
- The Necessity for Dry and Healthy Surroundings.
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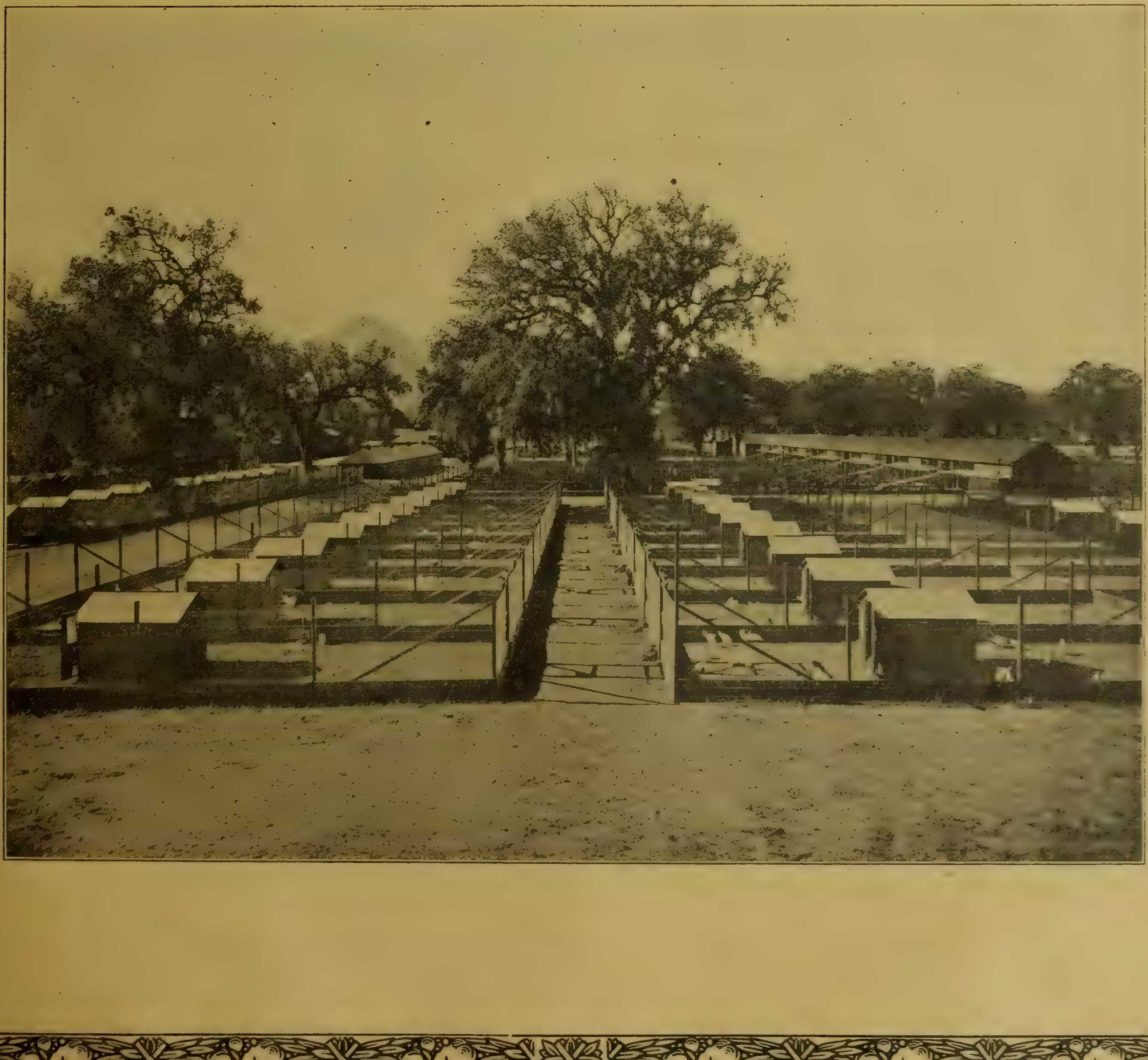

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The "OHIO" has its drive pulley, cutting cylinder, all on the main shaft. Our compact set of gears does the work. Avoids trouble and repair bills.

The "OHIO" cuts EVERYTHING—Alfalfa, Field Peas, Soy Beans, Sorghum, Kaffir Corn, Milo Maize, Corn—It's all the same.

Salem, Ohio, Oct. 23, 1912.

The Silver Mfg. Co., Salem, O.

Dear Sirs: Our 14x32 ft. silo was filled with the "Ohio" No. 17 and will say that in the six years we have filled silo we have never had the same amount of ensilage cut in the same space of time and as satisfactorily done. The 110 tons was cut and elevated in 5 hours. We had five teams hauling from nearby field and could not supply its capacity. It's a dandy. C. D. CARR.

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Instantly reverses the machine even under the heaviest feeding without the slightest strain, not even a gear tooth changing mesh.

ONE LEVER CONTROLS ALL

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No. 14 at State Orphan Home, Corsicana, State of Texas

The Silver Mfg. Co., Salem, Ohio.

Gentlemen:—It affords me pleasure to say that after three years' trial, your No. 14 "Ohio" Ensilage machine is still doing fine work. We have just finished filling a 100-ton silo with sorghum and found no trouble whatever. We are now operating the machine with a 10 H. P. motor and it gives perfect satisfaction. It certainly does the work. Yours truly,

JINK EVANS, Ind. Mgr.

ASK YOUR JOHN DEERE DEALER FOR PRICES AND INFORMATION, OR WRITE US

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is your best harness insurance. It penetrates the leather, closes the pores and so resists the attacks of the elements.

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DIRECTIONS
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We will trade your old car for a better one or will pay you cash for it. We also sell on commission, make loans on cars, etc. We always have a large stock of all makes and models and it will pay you to correspond with us if you are thinking of getting a car.

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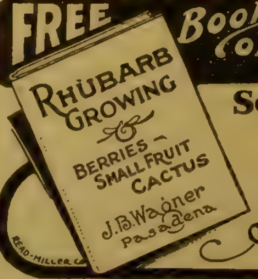

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California Cultivator

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Vol. XLIII No. 11 LOS ANGELES: THURSDAY, SEPTEMBER 10, 1914 One Dollar Yearly

Future of the Sacramento Valley

The Northern End of California's Great Valley is Perhaps the Least Developed, Yet Rich in Wonderful Possibilities, for its Soil has Remarkable Depth and its Waters are Plentiful. Written for California Cultivator by W. S. Guilford.

Since the first discovery of the Sacramento river and the great valley through which it runs, far-seeing pioneers have looked into the future and have prophesied great development for this rich agricultural region. Its possible production under intense cultivation and the number of people it can furnish food and clothing and furnish labor and comforts for has been frequently estimated by comparison with other rich valleys in older and more densely populated countries of the world.

All of these prophesies are interesting and valuable forerunners of progress. Every empire builder is more or less of a dreamer—and without empire builders of greater or less caliber the Digger Indian would yet control the Sacramento valley.

Compared with 50 or 60 years ago, a large amount of development has been done, but with the possibilities in mind the work has been only well started.

For years the Cultivator has watched and been interested in Sacramento valley development and has been glad whenever a creditable, well founded and sound project has been launched for adding to population and wealth production. Every drop of water delivered by any irrigation scheme adds to the welfare of our state — if the project is wisely planned and carried to a successful completion. And every failure—from any cause—is lamentable both from the standpoint of the misguided promoter and the state, but especially for the settler who would be a wealth producer for himself and for all—if conditions were right.

In the following interview we are glad to give to our readers an estimate of the valley's future and some of the things considered essential in development by one whose opinion we regard second to none, Mr. W. P. Dwyer of the Sacramento Transportation Company. He has been in close touch with commercial and agricultural affairs in the valley all his life and is a close student of conditions. For years transportation by steamers and barges was all that was available for this rich section, and now—even with competition from steam and electric roads—a greater tonnage of a greater diversity of products is handled by boats on the Sacramento river than ever before in the history of the state. In addition to his transportation interests Mr. Dwyer is largely interested in the development of agricultural properties in several counties in the valley.

"Several factors are concerned in the foundation of a successful and enduring agriculture," said Mr. Dwyer. "There must be a rich deep soil; ample moisture for maximum crops must be available; the climate must provide a long growing season; there must be control of natural agencies such as floods that unchecked or uncontrolled would result in disaster; the population must contain a large percentage of intelligent, industrious people who will work and who know how to work to advantage; and there must be ample capital available for the equipment and handling of farming on the same basis as any other successful business.

"All authorities agree as to the richness of Sacramento Valley soils, and if there were no other evidence the production of grain for the past 50 years and the marvelous yields on the same lands under irrigation make certain that intelligent handling is all that is necessary to turn this great natural resource, this store of fertility, into food. And properly conserved with crop rotation, and rational fertilizing Sacramento valley soils should be producing far more 10 or 20 or 40 generations from now than today. It is true that we have a considerable area of heavy clay and silt soils, but these have proven the most enduring in all older countries and with scientific farming we are making them wonderfully productive here.

"There is an abundance of irrigation water in the Sacramento Valley from wells, storage reservoirs and gravity diversion from streams, and compared with the difficulties in constructing works such as dams, diversion and distribution canals in many states, the building of irrigation projects here is a very simple matter. And to try to farm intensively without water in this valley is generally a foolhardy proposition. This is particularly true when with water there is no place in the world where crop production is a more stable enterprise than here.

"In the great Mississippi valley farmers consider conditions favorable if there are 120 days of growing weather between killing frosts. Here we have crops growing during the entire year, and have nine months when most crops make good growth. Citrus fruits do well in many sections. The deciduous fruits, alfalfa and other crops, find no more favorable conditions for growth anywhere than here.

"We have flood control problems, the same as there are in all of the other great alluvial valleys of the world. The winter rains bring down great volumes of water. The valley was made, and is yet in the making, in this way. The surplus water has for ages passed into great basins, giving relief until the water could all pass away into the bay and ocean. Now we are reclaiming these rich tracts with levees, adding large areas of rich land to our producing area, and when the works are complete, with the great by-passes and waterways that present plans contemplate, the flood waters will be satisfactorily handled.

"There is no more important factor in our development than the class of people we secure to augment our growing population. The possibilities warrant the industrious, capable farmer from any part of the world coming here, because with the same effort and capital he can produce more here than where he now is. Let me illustrate with this example—a good dairy farmer in Wisconsin for instance. He may be able to keep 30 cows on 160 acres of land, and have invested $15,000 to $20,000, in addition to his land. He grows some clover and timothy hay, and perhaps some alfalfa and corn for silage. The cows are stabled seven months of the year. On any good irrigated 40 acres in the Sacramento Valley he can grow more feed, keep more cows, and produce more butterfat, and at the same time enjoy the comforts of a far more favorable climate. And it is this type of agricultural manufacturer we want in this valley, the man who has made a success of his business, whether it be fruit or dairy or stock, in some place where conditions are less favorable than here. That kind of settler is a success from the start.

"There is no business in the world so poorly capitalized, none where it is so hard to secure capital at favorable rates for development and production as farming. Yet there is nothing so fundamentally sound, nowhere is that basic security so secure. It is true that formerly, and to a great extent now, farmers are not business men—they keep no books and do too little work with their heads. But business men are farming now, they are manufacturing food,

(Continued on Page 249)

Holsteins crossing Sacramento Valley Irrigation Ditch. Registered dairy cattle are very numerous now in the upper Sacramento Valley.

—control
Red
Black
Purple
and other
SCALE
by
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with
ZENO

The Most Efficient and Cheapest Method

ZENO *is more efficient than fumigation* because it controls ALL the insects controlled by fumigation at one-third the cost and is effective against four times as many citrus pests, such as Scale, Red Spider, Silver Mites, Black Fungus or Smut, Lichens and other fungus on the bark. It leaves the tree in a thoroughly renovated, clean, healthy condition.

ZENO *is not an experiment* but has been used for controlling pests on Citrus and Olive trees for the past five years. It is being used by the largest and most progressive growers in Southern California.

ZENO *is a perfect chemical compound* containing no free materials. Is not caustic and is safe and easy to use. Requires no agitation, mixing instantly with water, and remains in a perfect emulsion without separating in any way.

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Or by the Manufacturers,
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231 Franklin St., Oakland, Cal.
For information and demonstration in Southern California, address T. O. McClure, Hotel Hayward, Los Angeles.

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For good roots, thrift, and hardiness they can't be beat. Quality considered they challenge all competition. We are prepared to furnish the best of everything. Olive, Almond, Peach, Pear, Plum, Prune, Apricot, Cherry, Apple, Walnut, Grape, Quince, etc.

Orders are being booked daily, and we urge you to not delay.

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Free Catalog 28-B describes Bean Horizontal and Vertical Centrifugals.
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State your needs plainly; we will help you select the best pump for your special requirements. Write to us—NOW.
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Citrus and Tropical Fruits

REPORT OF CALIFORNIA FRUIT GROWERS EXCHANGE

By G. Harold Powell.

Financial Statement.

Eleven million, two hundred and sixty-two thousand, one hundred and eighty-five (11,262,185) boxes of citrus fruits have been shipped through the California Fruit Growers Exchange during the year ending August 31, 1914. This includes 10,156,724 boxes of oranges and 1,105,461 boxes of lemons, which makes a total of 28,193 carloads. The exchange shippers have sold 3.8 per cent more boxes of citrus fruit than in any previous year. The exchange members have forwarded 61.9 per cent of the citrus fruit shipped from California, which is the largest percentage of the total crop handled through the organization.

Money Received.

The money returned to California through the exchange amounts to $19,246,757.00. This makes a general average of $1.71 per box f. o. b. for every box shipped. The delivered value of the exchange fruit is $29,434,402.40. In one year only, 1910-11, has the amount of money returned by the exchange to California been exceeded.

Cost To Exchange Shipper.

The operating cost to the shipper who utilizes the facilities furnished by the exchange, including the salaries and entire expense of the 70 selling agencies, the maintenance and expense of the general office in Los Angeles, including the general manager's and assistant general manager's offices, the sales, traffic and legal departments, the cost of the daily telegraphic market-news service, and all other operating departments, the exchange share of the expense of the Citrus Protective League and all other expenses, is approximately 4¼ cents per packed box. This selling cost represents 1 3/5 per cent on the gross sales.

In addition to the operating cost, the exchange has expended 1½ cents per box for advertising its leading brands, or 3/5 of one per cent of the gross value of the fruit. This advertising expense is partly an operating cost and partly an investment for the sale of future crops. This makes a total cost of 5¾ cents per box, or 2 1/5 per cent on the gross sales.

While not a California Fruit Growers Exchange expense, there should be added to the marketing cost 84/100 of one cent per box, which is the average cost which the grower paid to maintain the sub-exchange during 1913-14.

This marketing cost, including the cost of advertising, which has been made possible by the cooperation efforts of the 6500 growers who conduct their operations at cost without personal profit to any one, is the lowest cost of marketing an agricultural crop anywhere in the world. Illustrative of the low cost of the exchange service to its members, it is interesting to note that the salary expense of the Los Angeles office, including the general manager and assistant general manager, traffic officers, attorney, cashier, sales agents and all assistants, including an average of 50 employes, is 3/5 of one cent per box.

Traffic Department.

The exchange shippers have been paid $108,428 for overcharges and breakage and damage to fruit in transit, the cost of which is included in the selling expense of 4¼ cents per box.

The exchange shippers have been paid $343,744.88, the refund of excess charges collected by the Citrus Protective League, with interest, at the termination of the lemon rate case. The league expense is included in the selling cost.

Consumption Increased by Advertising.

During the past few years the exchange has increased the per capita consumption of citrus fruits by advertising. The population of the United States has increased 21 per cent during the past decade; the consumption of California oranges increased 74.6 per cent during the same period. The production of California oranges and lemons is increasing rapidly and the exchange, looking to the future, as well as to the present interest of its members is, by judicious advertising, creating a larger consumption of oranges, lemons and grape fruit. At the same time it has established for the "Sunkist" brand a national standard of quality that is a cash asset to every exchange grower.

Increase In Crop.

From 1900 to 1914 the citrus fruit crop of California increased 254 per cent. The acreage has increased 128.9 per cent in the last decade. The shipments from Florida and California have more than doubled in the same time. The exchange organizations have, therefore, an obligation, not only to sell their fruit wisely from year to year, but to develop a distributing and selling system and an advertising policy at the same time which will cause consumption to keep pace with the increase in production. When production exceeds consumption, then the investment of the grower is jeopardized.

Losses From All Causes.

The business of the exchange has been conducted for the shipper with an estimated loss of $355 from all causes, or 1/542 of one per cent of the $19,246,757 returned to California during the year.

Fruit Growers Supply Company.

The members have purchased $3,319,062.04 of supplies through the Fruit Growers Supply Company, including $2,022,482.64 of packing house supplies, including shook, paper, labels, wraps and sundry supplies; and $1,296,579.40 of orchard supplies, including fertilizers and fungicides, heaters, oil and other sundry orchard supplies. The supply company operates at cost at an operating expense of ¾ of one cent on each dollar of business transacted. The business of the supply company increased 51.7 per cent over the largest previous year.

Review of Conditions in 1913-14.

As a result of the frost in 1913, California lost its commanding position in the leading markets of the country, especially in the East. Florida, profiting by our misfortune, was intrenched in the markets at the beginning of the year. California had to reestablish its citrus fruits in the mar-

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Give Absolute Control of Water

They are of rugged, massive construction—insuring maximum strength and durability.

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Buy from the largest Citrus Nurseries in the World

—and know what you are planting. Teague trees are better than others because scientifically grown. They are started right, grown right and shipped right. Ask for quotations.

We can supply all the STANDARD SORTS in almost any quantity—
ORANGES :: LEMONS
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Teague trees are well rooted, strong and thrifty, free from scale, guaranteed true to name.

OUR BOOK "CITRUS FRUITS" — handsomely illustrated; a wealthy fund of accurate data —sent for 25c in stamps.

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San Dimas, Cal. U.S.A.

IRIS Illustrated catalog containing valuable information, and beautiful color plate, 15 cents.
List with prices on over 200 varieties free upon request.
THE DEAN IRIS GARDENS, Moneta, Cal.

kets. In addition the year has been one of abnormal business unrest and depression, and the citrus fruit business, in common with other businesses, has lagged behind the normal rate of expansion.

That the exchange should have shipped the largest crop in its history and should have returned the largest amount of money to the state one year after the disastrous frost, except in the year 1910-11 when general financial conditions were natural, is one of the remarkable achievements in American horticulture.

Three leading factors have made this result possible: first, the international system of uniform distribution through the 70 exclusive agencies established by the exchange members; second, the international campaign of advertising which increased the consumption of California citrus fruits and quickly reestablished them with the consumers; third, the luscious character of the California orange, which makes it preeminently popular with the consumer. Without the systematic distribution, the aggressive salesmanship and the advertising of the exchange, financial ruin would have overtaken many growers as a result of the chaotic condition that would have followed the frost.

Readjustments That Must Follow Increase in Production.

The following readjustments must necessarily take place as the crop increases: First, a large increase in the per capita consumption during the early winter months when the navel crop of the north, the early navels of the south and the bulk of the Florida crop of oranges and grape fruit will naturally be marketed; second, an increasing competition between northern Valencias, late southern navels, and miscellaneous varieties, such as seedlings, Mediterranean sweets and St. Michaels, between May 1 and June 15 when the young Valencia groves of the north come into full bearing; third, a large increase in the consumption of Valencia oranges during the summer and fall months when the young Valencia groves of the south come into bearing; fourth, an increasing competition between the ripe late Valencias of the southern coast districts and the shipments of early oranges and grapefruit from Florida in October and November; fifth, an increasing competition of California lemons with imported lemons and an increase in the total lemon consumption of the country.

These conditions can be met only by recognizing the following fundamental principles:

The average standard of the fruit that leaves the state must be raised, both in grade and in keeping quality. The grade of fruit depends primarily on the grower and secondarily on the grading in the packing house. The keeping quality depends on the care in handling the fruit in the groves and packing houses. The by-product industry must be developed to utilize the lower grades that now are shipped.

Fruit of good eating quality only can be shipped in the future if the industry is to maintain its integrity with the consumer. The shipment of immature or frost injured fruit, or of misbranded varieties, within the state, or in interstate commerce, should be made a state and federal statutory offense.

The distribution of the oranges and lemons of each grower must be uniform throughout the year on a merchandizing basis; neither the grower or shipper can speculate on the market. The fruit must go forward naturally from each grove during the period when it possesses the best quality for that district. Regular distribution increases consumption; it stabilizes the business of the shipper, the jobber, and the retailer. It furnishes the consumer a supply at the lowest average price and gives the producer the highest average return because the product is handled by everyone at a reasonable distributing profit. The distributing cost of citrus fruit after it reaches the jobber, like many other food products, represents approximately 45 per cent of the consumer's cost. Erratic, speculative distribution increases the distributing costs; it results in a lower price to the producer and a higher cost to the consumer.

Effect of Advertising.

Primarily the function of our advertising is to increase the consumption of citrus fruits. To do this it is necessary to have a brand around which we can build our advertising arguments. This brand is the consumers' protection. It is his guaranty as to the quality of the fruit. In other words, we want him to feel that all he needs to know about an orange or lemon is, that it is Sunkist. We must make the consumer realize that the name Sunkist on an orange or lemon means just what the sterling mark means on silver. Our advertising will create in the minds of the consumer a public consciousness of the food value of oranges and lemons. This can only be done by maintaining the highest possible standard of quality, for unless an article has quality, it cannot be successfully advertised. The permanent prosperity of the citrus industry depends on get-

(Continued on page 263)

The Use Of Hercules Dynamite On Farm, Orchard and Ranch

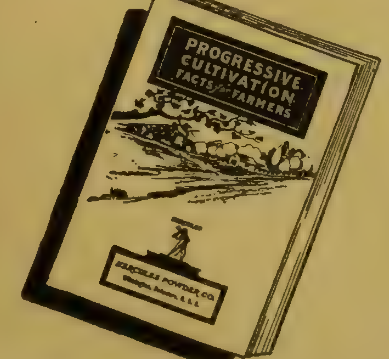
MANY people who are unfamiliar with dynamite have the idea that it is both difficult and dangerous to use.

Relatively speaking, this is not at all the case. Of necessity anything which has great inherent power is dangerous under certain circumstances. The fire in your kitchen stove, the gasoline in your car, the electricity or gas that lights your home—all are in a sense dangerous. You have to be careful with them.

You have to be careful with dynamite too. But this necessary care is a very small price to pay for the almost unlimited benefits derived from it when put to agricultural uses.

It will give you better, stronger trees, finer fruit, bigger crops. It will run ditches, fell trees, lift stumps and rocks, excavate cisterns, cellars, wells, etc. more quickly, more efficiently, and at less expense than the same work can be done by any other means. Yes, that care it requires, is care well invested.

We have published an interesting and instructive book, "Progressive Cultivation." It tells all about dynamite—how to handle it, how to store it, how to use it. You will find it both interesting and instructive reading. Write for a copy. No expense involved.


PROGRESSIVE CULTIVATION FACTS for FARMERS
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Please send me a free copy of your book, "Progressive Cultivation." I am interested in Dynamite for

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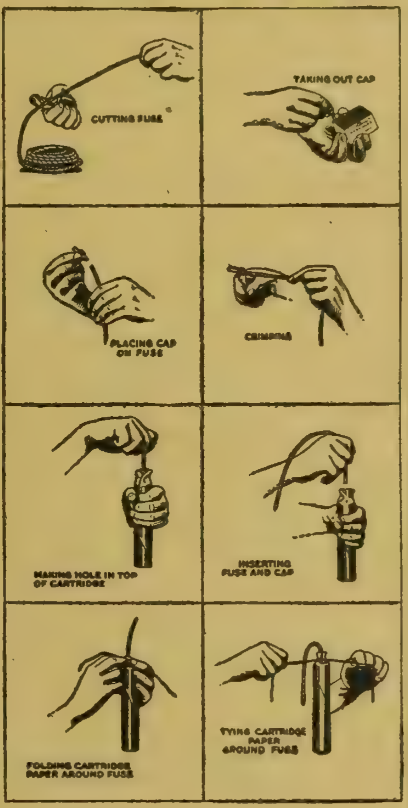

CUTTING FUSE
TAKING OUT CAP
PLACING CAP ON FUSE
CRIMPING
MAKING HOLE IN TOP OF CARTRIDGE
INSERTING FUSE AND CAP
FOLDING CARTRIDGE PAPER AROUND FUSE
TYING CARTRIDGE PAPER AROUND FUSE

How to Prime a Dynamite Cartridge

"Priming" is the inserting of the detonator, whether blasting cap or electric fuse, into the cartridge. When cap and fuse are used, it is first necessary to attach the cap to the fuse.

The fuse should be cut into lengths long enough to reach from the charge when loaded in the hole to at least three or four inches above the surface. One cap is then taken from the cap box by covering all of them, except one, with the box lid or with the hand and allowing the loose one to slip gently into the free hand. Do not try to pick caps out of the box with tweezers, nails, or any hard substances as they are likely to be accidentally exploded. Slip the cap carefully over the end of the fuse, taking care not to push the fuse very hard against the explosive charge loaded in the bottom of the cap and do not twist the cap on the fuse. When the fuse is pushed to the bottom of the cap, make a crimp not more than ¼ inch from the open end of the cap by using a Hercules cap crimper. A glance at the illustration shows you how this is done.

There are two accepted methods of priming dynamite—placing the detonator in the end or in the side of the cartridge. The former is the better way.

When priming in the end, the paper is folded back at one end of the cartridge and a hole made with a wooden punch about the size of a lead pencil or with the straight handle of the crimper into the exposed dynamite. The cap with fuse attached is inserted into this hole and the paper drawn together and tied tightly. The cartridge is then ready for use.

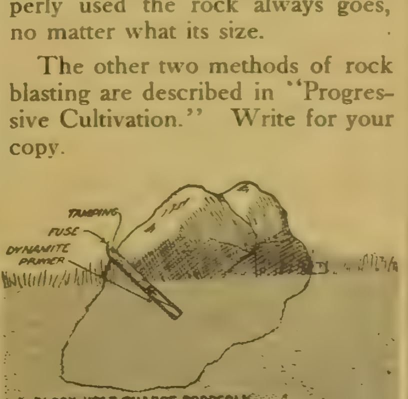
Dynamite Removes Rocks Cheaply and Quickly.

There is but one best way to do anything. The best way to remove rocks or boulders from a field that is to be cultivated is by the use of of Hercules Dynamite. As a matter of fact it is, in many instances, the only way.

There are three accepted methods for rock blasting It may be done by means of a block hole, a snake hole, or by mud-capping. The first is illustrated here. It is a slower method than either of the other two and is only necessary in cases of very large rocks or boulders.

When it is used, the charge is exploded near the center of the rock, as the illustration shows. When Hercules Dynamite is properly used the rock always goes, no matter what its size.

The other two methods of rock blasting are described in "Progressive Cultivation." Write for your copy.



A BLOCK HOLE CHARGE PROPERLY PLACED TO BREAK A BOULDER

"STEEL KING"

MOTOR PLOW

Saves time—money—worry—means better crops. Reasons are obvious when you consider what this excellent farm machine will do for you. The "Steel King" is really an all around farm machine.

Work of 8 Horses!

It will actually do the work of eight horses — do it quicker — and with much less expense.

Only 1 Man Required!

One man can operate the "Steel King" with perfect ease. All operations controlled from driver's seat.

8c per Acre!

Impossible, you say? But a demonstration will prove this statement. Will run at full speed on 4 cents per hour.

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You get also an economical first price as well as the lowest upkeep cost. Will do harrowing, discing, plowing, seeding, sawing, pumping, almost anything you want done.

Motor Car Flexibility!

Drives just as easily as a motor car — turns quickly — gets way back into the corners. Light weight — yet extremely sturdy and powerful.
Write today for complete information. It will pay you to learn about the "Steel King"—the up-to-date—the money saving farm and ranch machine.

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One gallon size 20c
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Write for our new booklet C. C.

Absolute Protection Against
FROST DAMAGE

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Merchants Nat. Bank Bldg.
San Francisco, Cal.

When writing advertisers, mention the Cultivator.

Deciduous Fruit Culture

CALIFORNIA WALNUT GROWERS ASSOCIATION SECOND CIRCULAR

Uniform Weights.

In line with our policy of cooperating in every way possible with the trade, we have now decided as a result of many requests from our customers, to hereafter pack all bulk walnuts in even net weight 100 pound packages. This will greatly simplify billing, etc., and is bound to prove a great convenience. All bags will have the words, "Net weight 100 pounds, when packed," plainly printed under the Diamond brand.

Crop Conditions.

Weather conditions have been favorable. An unexpected premature dropping of slightly "blighted" nuts has recently occurred which will lower our former crop estimate about five per cent. Our prediction now is for about 10,000 tons for California. It is well that this dropping has occurred early, as these diseased nuts will therefore be out of the way when harvesting commences and the nuts which are harvested should all be of excellent quality. Shipments still promise to be fully ten days earlier than usual. First droppings show up at least 90 per cent light meats, and barring the remote possibility of a freakish very hot spell within the next two weeks, the percentage of dark meats this season will be infinitesimal.

Effect of European War.

France has placed an embargo on shipments of all foodstuffs. This includes walnuts, of which she is by far the largest exporter. If the war continues throughout the fall, as indications now point, it will be difficult to secure imported walnuts from any European source in time for holiday requirements. The best Manchurian walnuts are produced in the Shantung province, China. Kiao-Chow is the port of shipment. This port is now being beseiged by the Japanese whose operations are expected to continue for several months. Germans control many of the railroads in Shantung province. It therefore is not expected that shipments in quantity will be moved from Shantung province until the blockade of Kiao-Chow is lifted. California must therefore be relied upon to furnish practically the entire holiday supply. The California production of walnuts supplies only about 40 per cent of the average consumption of the United States. A serious scarcity of walnuts can therefore be anticipated. Since the outbreak of hostilities in Europe we have been swamped with requests to accept orders "firm at opening prices, whatever they may be" by jobbers who have been counting on foreign walnuts to fill their requirements and by some of our regular trade who had ordered short. In order to protect our friends who placed S. A. P. orders with us early, we have had to universally pass all new business. Our regular customers can therefore be assured of their usual supply of good California walnuts and we believe they will make a good profit on their purchases.

Time for Naming Opening Prices.

Opening prices will not be named by us until we are about ready to make shipments. We believe the trade will approve this policy as it will give buyers an opportunity to know of the exact foreign trade situation at about the time their goods are ready to move—thus eliminating, to a great extent, the speculative feature. No definite date for naming our opening prices has been determined but the date will undoubtedly be fixed between September 20 and October 1.

New Pack Small Bags.

We have recently received a great many orders for Diamond brand walnuts packed in four-pound bags at one cent a pound premium over bulk goods. This small package is going to be a winner with the consumer. The supply is limited. Our broker can give you full information regarding the advisability of switching a portion of your present order to this pack. Better see him at once.

Future Information.

Before we name our prices we will place fully before you all information we can gather regarding both foreign and domestic conditions as affecting the walnut industry. We have salaried agents in Europe who will keep us informed as to conditions there.

PEAR BLIGHT

The Washington state experiment station calls attention of horticulturists of that state to the grave danger menacing the fruit industry in the shape of numerous and sundry alleged cures for blight (pear blight, "fire blight"). These cures take the shape sometimes of tree paints, sometimes of materials for injecting into the tree and sometimes of materials to be placed in the soil about the trees. It is the experience of scientific men, both in the experiment stations and the United States department of agriculture, that none of these so-called cures will do the work claimed for them. In other words, they are probably all pure fakes and their use can only result in loss to the orchardist.

The blight disease and its characteristics are well-known to plant pathologists and horticulturists the country over. Its cause is well-known and the methods of combating it are well-known. There is therefore, little excuse for making mistakes in regard to combating this disease. The only way to cure a tree of blight, once it is affected, is to cut out the infected portions. There is no patent cure. From the very nature of the disease it is very improbable that there will be, and anyone who takes advantage of people in a time of distress, such as a blight epidemic, to work off patent cures or panaceas for the blight is, to say the least, a most undesirable citizen. It is unfortunate that our laws are not drastic enough to prevent the activities of the blight nostrum fakers.

It seems especially necessary at the present time to call attention to this matter on account of the fact that there are being exploited on the market certain "tree paints" as blight cures. One thing seems absolutely certain in regard to these "tree paints," namely, that if they will kill the blight bacteria in the tree they will also kill the tree, or that portion of it upon which the paint is placed.

Ranchers
Dairymen
Fruit Growers
and Investors

ARE you looking for the BEST—absolutely THE BEST—conditions to be found in all California? Nothing like it anywhere in all the State. Read and reflect—then write us for further information and details.

WATER—Abundant and good GRAVITY irrigating and domestic water, ALL you want—WHEN you want it—AS you want it—ANY hour of day in the year at lowest possible cost (only the up-keep of ditches), averaging about 38c per acre per year. One-half miner's inch (about six acre feet) with every acre, from your own canal, with perpetual water right for every acre you buy.

SOIL—The richest, loamy, easily worked soil, containing abundant lime and phosphates, producing enormous crops of alfalfa, grains, fruits and vegetables. (We just cut 28 acres of alfalfa, yielding 132 tons, over 4½ tons per acre, at one cutting.) Level lands, but with enough grade to irrigate easily, that can be cleared and prepared for crops at low cost.

STOCK-RAISING—The fine quality of the alfalfa and grasses grown here, favorable climate, pure water, with mountain range for summer feed, guarantee to the stock raiser that perfection only obtained under most favorable conditions, and warrant the high prices that are obtained for Owens Valley grown cattle, hogs, horses and other stock. Hundreds of head of cattle are fattened here for market annually.

DAIRYING—Dairying in any country has long been recognized as a money-making occupation. Owens Valley, being exceptionally favored in the matter of bright, dry climate, pure water and fine feed, offers opportunities to the dairyman which few communities can boast. Before many years Owens Valley will be one of the banner dairying valleys of this State.

GOOD NEIGHBORS — Good Schools and Churches and Solid Banking Facilities and Positively the VERY BEST bona-fide Land Proposition in the State. Reasonable prices and terms.

BEST of bank and business references on request. We will demonstrate every statement to your satisfaction. You cannot afford to overlook this limited offer (only 55 forty-acre tracts in all), which is the new subdivision of one of the banner ranches of this State. Just placed on the market by responsible owners. Write, phone or call for further information and illustrated printed matter.

Owens Valley Land and Water Co.

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Suite 630 H. W. Hellman Bldg.
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Eucalyptus Seeds

In large or small quantities, 40 species to select from. **Write for free pamphlet, "Eucalyptus Culture."** It tells you how to sow the seed, raise the plants and plant out in the field. **Also describes all the leading kinds,** gives their uses, etc.

Trial packets 15c each, 4 for 50c. Write for prices in quantity.

THEODORE PAYNE
345 So. Main St. Los Angeles

In other words, surgery would do the same work as such a paint, minus the cost of the paint, and probably do it more effectively.—Ira D. Cardiff.

APPLE-JUDGING SCORE

The three foremost authorities on apple culture in America have been named as judges at the California Apple Show to be held in San Francisco next October.

George E. Rowe will come all the way from Grand Rapids, the shipping point of the famous Michigan apple belt, to judge the 200 varieties of California grown apples which are to be shown. Rowe is a prominent member of the Pomological society and has served as a judge at the last four Watsonville shows. From Medford, Oregon, the center of the fruit-producing Rogue River Valley, will come J. D. Olwell, a prominent apple grower, and the third judge will be Prof. C. I. Lewis, chief of the Oregon Agricultural College and experiment station at Corvallis, Oregon.

Under the Watsonville system of judging green fruit the total perfect score is 1000 points, made up of 600 points for perfect fruit, 100 for uniform size, 100 for color and 200 for perfect pack. In judging the pack, 40 points will be allowed for bulge, 40 for alignment, 40 for height at ends, 40 for compactness and 40 for attractiveness and style.

For each wormy apple 40 points will be deducted; for other imperfections, for scab or scale, eight points each will be taken off. Deductions on pack, uniformity and color will be made in the discretion of the judges, but no distinction will be made between three, three and one-half and four tier packs. In the competition for sweeepstakes prizes, no variety will be given any preference, and in judging carload lots, 10 boxes from each entry will be examined; 50-box lots, four boxes; 25-box lots, three boxes; 10-box lots, two; and five-box lots, one. In the event of tie scores between two or more entries additional boxes for each entry tied will be examined until the tie is broken.

CONTROL OF PLANT LICE THAT INJURE WALNUTS

The kinds of plant lice that injure the walnut may be artifically controlled with sprays. These plant lice, which are small lemon-yellow insects about 1-16 of an inch long, infest the leaves and nuts, voiding a sweet gummy substance on which grows a black fungus. These insects are largely kept in check by certain natural foes, but these foes do not appear in time as a rule to prevent the lice from injuring the nuts. The United States department of agriculture has therefore been investigating remedies to control the insects before they become injurious.

Spraying Solution Recommended for Summer.

If it is necessary to spray in spring or summer a combination of two per cent distillate-oil emulsion and strong commercial tobacco extract (1 to 1500) is recommended. It must be applied under a pump pressure of at least 150 pounds and the spray directed on the nuts and underside of the leaves. The spraying should be thorough.

Winter spraying is better because far less material is required when the trees are bare than when the foliage is thick. A thorough application may be accomplished more satisfactorily in the winter when high trees can be reached with ease. The winter spraying is directed against the eggs, where the summer spraying is against the insect itself. As walnuts are of commercial value in California the use of the sprays as recommended should help the grower to increase his income. A special professional paper (Bulletin No. 100) has just been issued by the department describing in detail experiments on "Walnut Aphides in California."

UNFERMENTED GRAPE JUICE

The question continually comes to us as to the feasibility of manufacturing unfermented grape juice. We referred recently to the oft-expressed opinion that California juice has not the flavor demanded by the trade and questioned the advisability of its manufacture unless entered into in a large way that will warrant a persistent advertising campaign to force it on the market. But regarding the flavor and the demands of the trade we wrote to Mrs. Louise C. Smith of Pomona, who manufactured grape juice for a period of 10 years and finally gave up the venture. From Mrs. Smith's letter we quote:

"I am sorry not to be able to give very great encouragement to one desiring to make a pure unadulterated grape juice for the market. My own experience certainly does not warrant it. I persisted for 10 years, but I found it increasingly difficult to compete in price with the many cheaper goods constantly being put upon the market. I do not believe it is possible to make a palatable juice, pure and good, and do it cheaply; it is a costly process if only heat and hermetic sealing are resorted to in its preservation, as I found out to my cost. Of course I assume that is the kind of juice you wish to know about. My last and final crushing was 100 tons (surely a large enough quantity). On this I realized only about 10 cents a case of two dozen bottles above expenses, allowing nothing for my labor, while I did the work of two men, being my own engineer and laboratory expert.

"I think there is no prejudice against California juice as such, but the average consumer is more discriminating as to price than quality, unfortunately."

ESCAPED JUST IN TIME

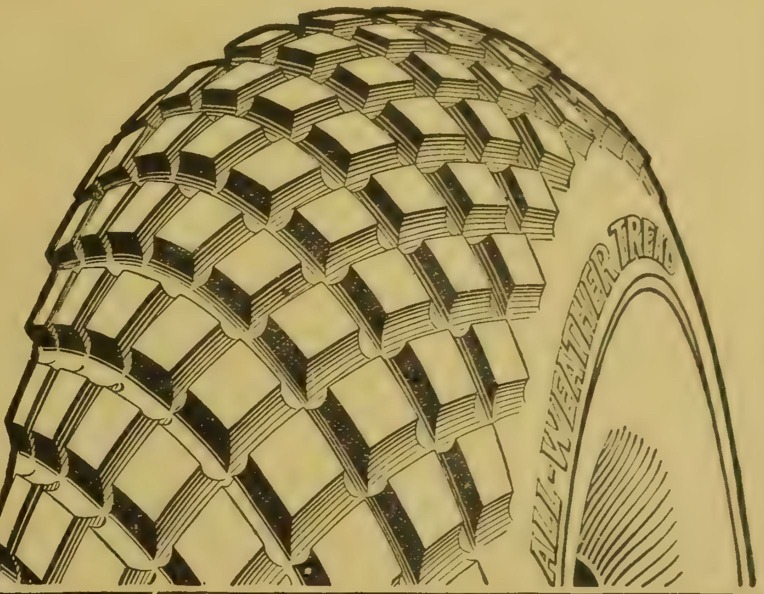
Hans had a small shop in the city, and on leaving it to go home one evening he accidentally turned on a gas jet. Early on the following morning Hans reappeared, and just as he opened the door he struck a match to light his pipe.

Among the things that happened was Hans, and when the force of the explosion died out, he was rolling up against a tree along the curbstone. Instantly several people rushed to his assistance.

"Are you hurt, Hans?" they solicitously cried, lifting him to his feet.

"No, I haindt hurt," answered Hans, "but it looks as if I shoost got oudt in time.—Philadelphia Telegraph.

Your Enemies as a Tire User are
Rim-Cuts
Blow-Outs
Loose Treads
Punctures
Skidding
Note How we Combat them in
No-Rim-Cut Tires



Needless Tire Troubles

Rim-Cuts—the chiefest tire troubles—are utterly needless. They are ended completely—in a faultless way—in Goodyear No-Rim-Cut tires.

Blow-Outs, in large part, are due to wrinkled fabric. Our "On-Air" cure eliminates this cause. This exclusive Goodyear process costs us $1,500 daily.

Loose treads we combat by a patent method. Hundreds of large rubber rivets are formed in each tire, reducing this risk 60 per cent.

Punctures are minimized in our All-Weather tread. It is tough and double-thick.

Skidding is best combated by this same exclusive tread. The grips are sharp, deep, resistless. Yet the tread is flat and regular. It runs as smoothly as a plain tread.

Save These Losses

Save the avoidable troubles. Get all the safety, strength and mileage that you can. Then you have the utmost in a tire.

That is what Goodyear gives you. In the five ways cited, no other maker offers what we give.

The result is that Goodyear leads. No other tire commands such prestige or such sale.

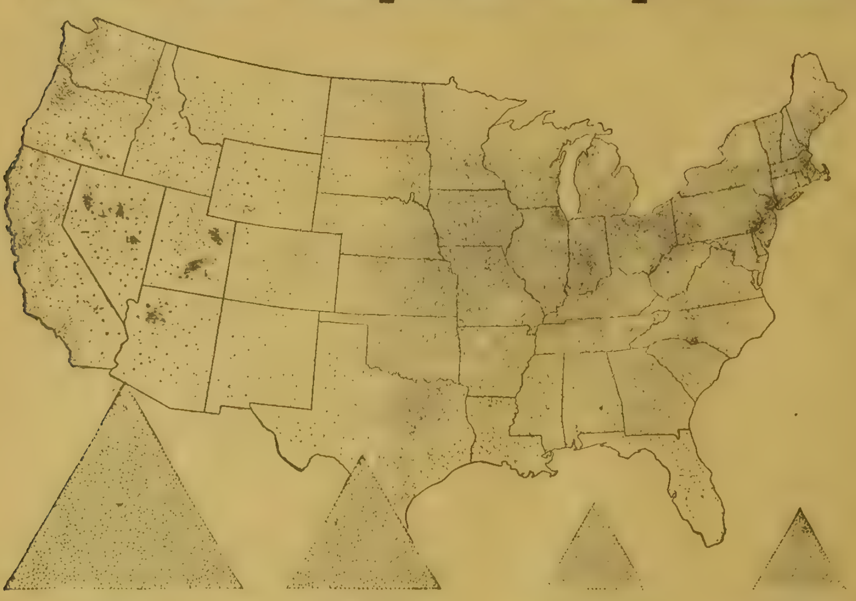
And our matchless output enables prices which few makers meet.

GOODYEAR
AKRON, OHIO
No-Rim-Cut Tires
With All-Weather Treads or Smooth

Tires are not alike. Only one tire made offers these great Goodyear features. Get it. Learn what it means to you.

THE GOODYEAR TIRE & RUBBER COMPANY, AKRON, OHIO
Toronto, Canada London, England Mexico City, Mexico
Branches and Agencies in 103 Principal Cities DEALERS EVERYWHERE Write Us on Anything You Want in Rubber
(1874)

What the Telephone Map Shows


56.8%
Exchanges Bell-connected, but not Bell-owned.
23.5%
Exchanges Bell-owned.
10.5%
Exchanges not Bell-owned or connected.
9.2%
Places served by two companies.

EVERY dot on the map marks a town where there is a telephone exchange, the same sized dot being used for a large city as for a small village. Some of these exchanges are owned by the Associated Bell companies and some by independent companies. Where joined together in one system they meet the needs of each community and, with their suburban lines, reach 70,000 places and over 8,000,000 subscribers.

The pyramids show that only a minority of the exchanges are Bell-owned, and that the greater majority of the exchanges are owned by independent companies and connected with the Bell System.

At comparatively few points are there two telephone companies, and there are comparatively few exchanges, chiefly rural, which do not have outside connections.

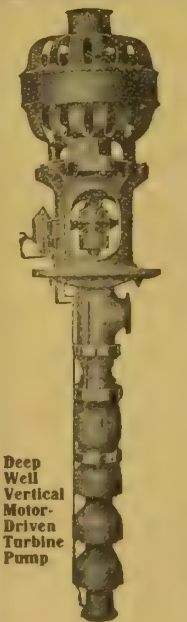
The recent agreement between the Attorney General of the United States and the Bell System will facilitate connections between all telephone subscribers regardless of who owns the exchanges.

Over 8,000 different telephone companies have already connected their exchanges to provide universal service for the whole country.

AMERICAN TELEPHONE AND TELEGRAPH COMPANY
AND ASSOCIATED COMPANIES

One Policy *One System* *Universal Service*

High Grade Irrigation
Pumps



The Jackson Deep Well Turbine Pumps are so carefully designed and constructed they have a higher efficiency than any other pumps of this type.

Our motor driven pumps are absolutely noiseless and have neither valves, rods nor gears to get out of order.

Write for our latest bulletin describing these pumps and also tables on hydraulics.

Our Jackson Catalogue No. 48C is free. Send for one.

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PIPE Second Hand
SCREW CASING
Alexander Pipe Company
OFFICE—254 No. Point Street, San Francisco, Cal.—WORKS
1611 E. 6th Street, Los Angeles, Cal.

General Agriculture

BUTTERFLY THREATENS ALFALFA

The beautiful alfalfa butterfly with its golden and orange colors that contrast conspicuously with the bright green of the fields brings no enjoyment to the alfalfa grower in the Southwest, for its appearance may mean that in a few weeks the bright green of the alfalfa may be transformed into brown, dead stubble by a caterpillar. Nearly every year this happens to a greater or less degree in the Imperial Valley of California and in the Salt River Valley of Arizona. To aid these alfalfa growers to rid themselves of this pest, the United States department of agriculture has just issued a bulletin (No. 124) entitled "The Alfalfa Caterpillar," which may be had free of charge by those who may profit by it.

The caterpillar that evolves from the eggs of the attractive butterfly is found in all the states save a few on the Atlantic seaboard. Its main sphere of action, however, is in the west. In the Imperial Valley in 1912 the hay crop was lessened by one-third through the feeding of these caterpillars. In 1913, fields in the Salt River Valley of Arizona, had as much as 50 per cent of the alfalfa destroyed. In these southwestern sections alone from $500,000 to $1,000,000, damage annually results from its ravages.

The butterfly is an easy one to single out. The wing is an orange color with a black outer border and a lighter yellow color on the lower side with no border. There is a small black spot in each of the fore wings and a double spot of orange on each hind wing. When the butterfly is at rest the lower surface of the wing is the one noticed. The larvae that hatch from the eggs of the butterfly are dark, tiny, cylindrical objects, which soon take on a green color almost exactly the shade of the alfalfa. The caterpillar within 12 days attains a length of 1½ inches.

The energetic, up-to-date farmer can greatly reduce and at times eliminate totally the damage done by the caterpillars of the alfalfa butterfly. The tiny larva from which the caterpillar develops, if exposed to the hot sun and dust, soon dies, and when careful methods of haying are followed under a hot sun most of the creatures die. The careful farmer, who follows the suggestions given herewith, should save a great part of his alfalfa crop from destruction.

Suggestions for Control.

Keep the ranch in the best possible cultural condition. Irrigate it often and thoroughly and as soon after cutting as the crop of hay can be gotten off the ground.

Renovate every winter and during the month of August, or even oftener if possible, either by disking or by use of an alfalfa renovator, thus disturbing any pupae that may be present and putting the land and alfalfa in condition for good growth of succeeding crops.

Cut the alfalfa close to the ground and clean, especially along the ditch banks, borders, and turning rows, as well as in the main part of the field.

Cut the alfalfa earlier than is the general rule. The proper time is when it is just coming in bloom or is one-tenth in bloom. Watch for caterpillars in the early spring crop, and if many nearly grown ones are observed cut the hay a few days before it is in bloom and thus save the next and future crops.

A minimum amount of damage occurs in fields that are systematically pastured all or part of the time.

A field should never be abandoned because the caterpillars threaten the destruction of a crop of alfalfa before the hay can possibly mature. Mow it at once, cutting it low and clean, thus saving part of the present crop, and in so doing starve, and allow the heat of the sun to kill, a great many of this generation of worms. Follow this by disking and then by either rolling or brush dragging, and a great majority of any remaining larvae will be killed. The ground should then be thoroughly irrigated, and by these efforts the coming crop will be assured.

Turkeys and chickens when allowed the run of a field will keep the numbers of the caterpillars at a minimum.

The protection of toads should be encouraged, as they eat many of these insects, as well as other injurious forms.

It has been noted that a carrying out of only part of these recommendations will not at all save one's crop. The best results come to the one who is thorough in method.

Cooperation among all farmers is necessary to suppress an insect attack completely. An occasional outbreak has been known to occur upon a farm or ranch that is under the best possible condition of crop culture, but in each case it was noted that the careless methods of a neighbor were responsible for the reinfestation.

A FEW WORDS OF CAUTION

A final word of caution regarding economical operation of the machine is given in The Modern Gasoline Automobile, by Page.

In order to obtain the best results from an automobile it is imperative that the owner familiarize himself with all the details of its operation unless he is sufficiently wealthy to hire help to drive and look after the car. All car owners who expect to look after their own machines must first acquire a knowledge of all details of the oiling system and the various points of the chassis that require oiling. More machines wear out because of lack of proper attention to lubrication than because of the amount of work done, as present designs of modern automobile parts are thoroughly reliable and can be depended on to give satisfactory service for many thousand miles without mechanical deterioration. These results can only be obtained if care is taken to keep every moving part clean and properly lubricated.

Careful driving and the judicious control of the car will do much toward maintaining efficiency of the mechanism and it is well to remember that more harm can be done to the various chassis parts by a fast run of a few hundred miles than will result from thousands of miles of slower driving. It is well to drive cautiously at all times and to remember that other users of the highways have rights that must be respected.

When operating a car on rough roads the speed should always be reduced to a low point, and usually the comfort of the passengers will provide the best indication of whether the car is being operated at the proper speed or not.

As soon as any parts are defective and repairs are necessary that cannot be made by the motorist himself the work of restoration should be given to a competent mechanic, even if his charges are higher than those having less experience. At the end of every active riding season and before the inception of the new period of service the car should be thoroughly overhauled and one who is able to appreciate the value of this work of restoration and who takes care of the mechanism always has a machine that is in good running order and that will give satisfactory service. Many motorists are short-sighted because they neglect the mechanism and run the machine as long as it will hold together. As a rule these are the pessimists who hold that automobiles are an unreliable and costly possession.

THE ECONOMY OF THE TRACTOR

The modern farmer and orchardist is placing his farm or orchard upon a business basis. No longer is he satisfied with plodding along in the old way, wearing out horses and men in performing the work that may be done by machinery. Time is an important factor in most of such work, and whatever is accomplished must be done in a certain time, and hence that which contributes to getting the work done more quickly adds to the profits of the business. Motive power has contributed much to the cost of operation. Horses are costly and slow, and they must be fed and cared for whether they are working or not, and the depreciation is heavy. There is now taking place a complete revolution in these things, and machinery is rapidly taking the place of horses, as it is known that they eat up too much of the profits.

Threshing Beans with Tractor

A Minnesota agricultural experiment station report says: "The labor of horses constitutes one of the heavy costs of farming. In order to have motive power available at seed time and harvest, the farmer is compelled to feed and house horses through seasons of practical idleness. On many farms, from one to three unnecessary horses are kept, mainly that they may be available during a few days."

One man can handle from two to four horses and do it right. It is becoming harder to get good men and the wages of such are advancing rapidly. To meet this condition of affairs, and because of the increased value of the land, up-to-date methods must be used; the land must be plowed deep and rapidly, and the cultivator must be kept going to conserve the moisture in the land and to prepare proper seed beds. This cannot be done economically with horses, and hence the ever-increasing demand for a tractor that will be light in weight, economical in operation, reasonable in cost, and which will be calculated to perform the work.

Let Gasoline Do It in the Orchard

Tractors of large power have been in successful operation for a number of years, and these have fully met the requirements of the large grain farmer and have demonstrated the economy of doing this class of work with machinery.

To our mind the members of the Cultivator family are more interested in a tractor that will perform the work of plowing and cultivating in the orchards and vineyards, plowing up and seeding the smaller grain fields, operating the pumping and electric lighting plants, driving the smaller bean and grain threshers, hauling the crop to the station, as well as any other service that can be rendered by six to eight horses.

One of these small tractors was used by one of our California grape growers this spring, plowing and cultivating 250 acres, some of which had a grade of five per cent or more, and the average consumption of California distillate was 11 gallons for ten hours, during which time there was a loss of circulating water by evaporation of but one gallon per day. This was doing the work of six good horses. When the grape vines had covered the ground the tractor was put in the shed and all expense stopped. No more feed to be bought or attention given, as would be the case if horses had been used.

Nearly every week tractors of this character are advertised in our columns, and we would strongly advise our subscribers, if they are interested, to write to the representatives of these machines, asking for catalogues and full information.

We understand that these people are ready to demonstrate their tractor to any prospective buyers.

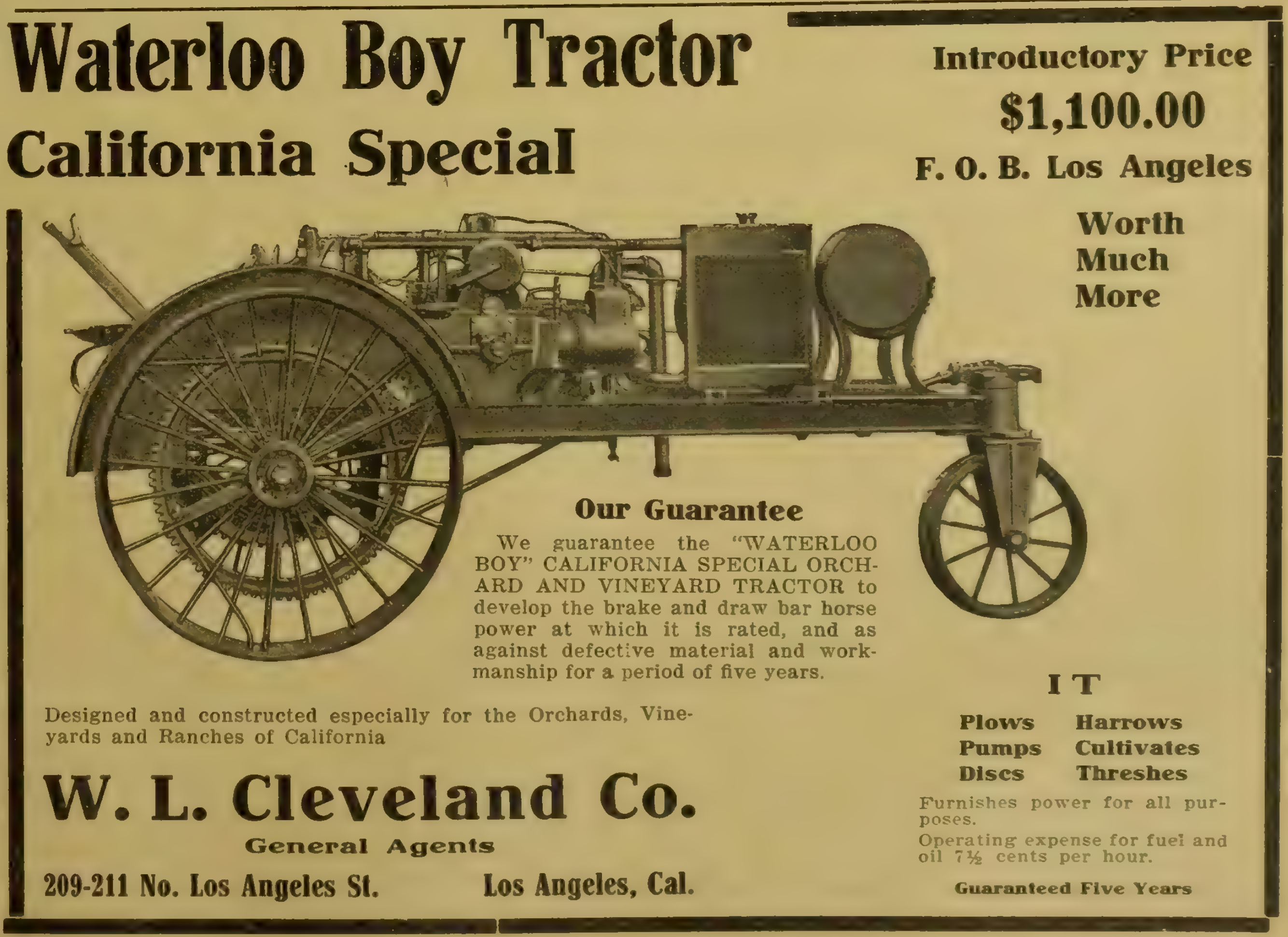
SACRAMENTO VALLEY FUTURE

(Continued from Page 243)

and such men certainly rank at the very head of all producers in the world. They are growing indispensable necessities from nature's resources, and the consumption of their products is and must continue to increase much faster than the supply. And no security can ever be so good as the land and equipment from which this food is produced. There is a great change in recent years among broad-minded bankers in regard to farm development. They realize that the growth of the state and nation and of all business must start with a successful agriculture, and sound farming businesses are looked on with more favor now than ever before. Our farmers must have sufficient money to equip and handle their farms if the greatest possible returns from the land are to be secured. Many Sacramento Valley banks are doing splendid constructive work by the financial support they are giving worthy developers and settlers.

"Recognizing our vast resources of all kinds, and the fact that there can be no question of our ultimate future, there is one thing we must keep constantly in mind to have our development progress steadily without setbacks and disappointments, and that is: Land prices must be backed by income possibilities, and we must not anticipate the future too far. I firmly believe that the Sacramento Valley will some day have a vastly greater valuation, but increase in value should follow income production, and the money required for development is a factor that must be considered as well as the price of undeveloped land. An agricultural property is worth a price on which it will return a good rate of revenue for a long period of years, and such things as depreciation from any cause, whether orchards, buildings or equipment, must be carefully considered. In fact, the business end of a plant for the manufacture of crops or meat must be figured the same as any other manufacturing proposition.

"We have a great valley with a great future, but we must not let it go at that. There is a work of constructive building to be done and every interest must do its part, settler, land developer, irrigation project builder, carrier of passenger and freight and banker. But it is a work that develops big men in every line of activity, one where achievements will be pleasant to look back upon and one it is a privilege to have a part in.



Waterloo Boy Tractor
California Special

Introductory Price
$1,100.00
F. O. B. Los Angeles

Worth
Much
More

Our Guarantee
We guarantee the "WATERLOO BOY" CALIFORNIA SPECIAL ORCHARD AND VINEYARD TRACTOR to develop the brake and draw bar horse power at which it is rated, and as against defective material and workmanship for a period of five years.

Designed and constructed especially for the Orchards, Vineyards and Ranches of California

W. L. Cleveland Co.
General Agents
209-211 No. Los Angeles St. Los Angeles, Cal.

IT
Plows Harrows
Pumps Cultivates
Discs Threshes

Furnishes power for all purposes.
Operating expense for fuel and oil 7½ cents per hour.

Guaranteed Five Years

E·W·Paige of Holtville bought 160 acres in Milford Valley—Read his letter!

Milford, Utah, Aug. 20th, 1914.

To Whom It May Concern:

After living twenty years in different parts of California—farming under different irrigation projects all the way from the northern part of San Joaquin valley to the Mexican line, spending eleven years of this time in Orange county—I have bought 160 acres of Milford valley land following a fourteen days' investigation of this project. I was convinced after a thorough test of the productivity of the soil, permanency and cost of water supply, climatic conditions, markets, railroad facilities, social and educational advantages and the opportunity for profit through increasing values, that this was the best possible investment I could make. Purely as an investment opportunity or considered from the home viewpoint, I do not believe any one could make a mistake by buying land in Milford valley. Yours truly,

E. W. PAIGE.

$30 AN ACRE CASH **Under Gravity Irrigation System. Perpetual Water Right — Your Water for All Time to Come — $70 Per Share, 12 Years Time to Pay for It if You Wish.**

Adjoining Milford, Utah, on Main Line of Salt Lake R. R.

The American farmer is entering on an era of prosperity unprecedented. Elbert Hubbard recently said: "I talked to three thousand farmers. The sentiment of the audience was that farmers were to get a bigger and better price for their products than they have in the past. I predict a prosperity the equal of which we have never before known."

Milford Valley offers the greatest farm land opportunity of years—land selling at $30 today that should be worth $250 an acre or more when under cultivation. Where else can you get land on the main line of a transcontinental railroad, that will net $70 or more per acre when in alfalfa—will yield (average crop) 50 bushels of wheat and 90 to 100 bushels of oats per acre, and do this year in and year out—the best potato land in the west (400 to 500 bushels per acre of perfect potatoes that will command a premium in any market)—bumper crops of fruit, apples, pears, peaches, melons, garden truck—**hundred per cent land in every respect at $30 PER ACRE?**

Keen minded ranchers whose bank accounts are **proof** of their past judgment of farm land values are the type of men that are buying in Milford Valley. Go and see this land **yourself**—a Paradise of green valley bordered by rugged mountains, bathed in an invigorating atmosphere of crisp mountain air. This is a land-buying opportunity that will not come again. Write or call today for illustrated booklet. Special home-seekers' excursions at low rates Wednesday and Saturdays from Los Angeles.

Western Securities Company,
710 Hollingsworth Building,
6th and Hill Sts., Los Angeles, Calif.

The great economy of operating a Krogh Pump means lower cost — with the most satisfactory service. Free booklets — 82B about motor-driven pumps—78B Horizontals and Verticals—85B about Turbines.

Krogh Mfg. Co.
San Francisco - Los Angeles.

THE LARGEST RETURNS FOR YOUR MONEY

proved by actual experience, are produced by NITRATE OF SODA; because Nitrate is always needed in our soils.

Send five cents for postage on free books, and state what crops you are growing.

NITRATE AGENCIES COMPANY
W. S. SPARR, AGENT 321 Stimson Bldg., Los Angeles, Cal.

Farm Economics

A NORMAL DAY'S WORK FOR VARIOUS FARM OPERATIONS

With the idea of helping the farmer to plan his various farm operations systematically and in advance, the bureau of plant industry, of the United States department of agriculture, through its office of farm management, has for some time been collecting data as to the acreage that constitutes a normal day's work in plowing, harrowing, drilling, seeding, spreading manure, spraying, harvesting, hauling, etc., with different types of land and different kinds of farm implements and machinery. To arrive at averages, the specialists of the department collected information as to the amount of work actually done under varying conditions by many farmers throughout the United States. These figures were then averaged and finally, to make allowance for varying conditions throughout the country and to arrive at what might be called an adjusted performance for all sections, the specialists developed a series of figures which represents neither a maximum nor a minimum, but the amount of work that any farmer might normally expect to accomplish. These figures, which are published in Bulletin No. 3, will prove of practical value to the forehanded farmer who wishes to lay out his work so that his fields will be in condition for each operation at the best date for seeding, cultivating, and developing his crop.

The following are four of the 47 tables published in this bulletin, which give preliminary results of the investigation which still is under way. The following tables deal with operations that are of interest in the fall:

A BUSHEL OF POTATOES

By B. T. Galloway in Rural New Yorker

The quantity of potatoes involved in this story was something over 800 bushels, but for simplicity's sake we have taken a bushel as the unit. The question therefore, that we are setting out to answer is: What happened to this bushel, which represents the average of the 800 bushels involved?

The total cost of producing the bushel of potatoes was, omitting small fractions, 43 cents. The various items that entered into this 43 cents were as follows: Seed, eight cents; fertilizer, 20 cents; plowing, six mills; planting, two and two-fifths cents; cultivating, one and three-fifths cents; spraying, six and two-fifths cents; harvesting and sacking, four cents. The yield was at the rate of 125 bushels to the acre. The potatoes had to be hauled from the farm to the station, a distance of about a mile; shipped by rail a distance of 16 miles, then hauled from the station in the city to the commission man one mile. The cost of freight and drayage at both ends was seven cents, bringing the total cost of the bushel of potatoes to 50 cents.

The potatoes were sold by the commission man, who made returns for each shipment, but as a matter of fact it was definitely known that in some cases where the returns were made the potatoes had not actually been sold. The commission man allowed, as is the practice with commission men in some places, what he considered a fair price for the potatoes. In this particular case it was 60 cents

Table No. 2—A normal day's work with a walking plow, giving the daily acreages reported at six-inch depths for each width, adjustments for these widths, and a scale of allowances for other depths.

(Net Hours in the Field, 9.65)

Team and Width	Plowed Per Day Acres	Number Averaged	Adjusted Acreage	Allowance Per Inch in Depth Acres	Practicable Depths Inches
Two-horse teams:					
8 inches	1.69	18	1.50	0	3 to 12
10 inches	1.62	64	1.60	0	3 to 12
11 inches	1.67	19	1.65	0	3 to 12
12 inches	1.76	143	1.70	.10	3 to 10
14 inches	2.00	151	1.80	.12	3 to 9
16 inches	2.11	22	1.90	.15	3 to 8
Three-horse teams:					
8 inches	1.50	1	1.70	0	3 to 12
10 inches	2.10	5	1.90	0	3 to 12
11 inches	1.50	2	2.00	0	3 to 12
12 inches	2.40	10	2.10	0	3 to 11
14 inches	2.32	38	2.30	.10	3 to 10
16 inches	2.77	65	2.50	.12	3 to 9

Table No. 6—A normal day's work with a spike-tooth harrow, giving the average acreages reported for the widths most frequently used and adjustments for other widths.

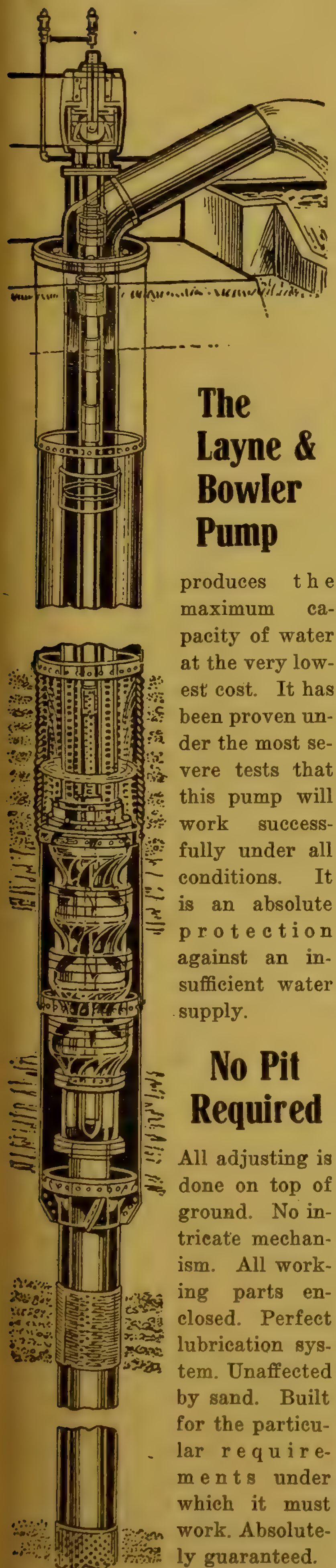
(Net Hours in the Field, 9.65)

	Width of harrow		On Freshly Plowed Land				On Well Packed Land			
Number of Horses	Range Feet	Most Common Width Feet	Harrowed Per Day Acres	Number Averaged	Adjusted Acreage	Allowance for Each Foot in Width Acres	Harrowed Per Day Acres	Number Averaged	Adjusted Acreage	Allowance for Each Foot in Width Acres
Two	4-12	8	10.8	224	9.50	1.2	12.9	194	11.5	1.5
Three	8-16	10	15.3	149	13.5	1.5	19.0	140	17.5	1.8
Four	10-26	16	28.3	112	25.0	1.8	35.1	102	32.0	2.0

Table No. 8—A normal day's work with a disk harrow, giving the average daily acreage reported for the widths most frequently used and adjustments for other widths.

(Net Hours in the Field, 9.65.)

	Width of Harrow		On Freshly Plowed Land				On Well Packed Land			
Number of Horses	Range Feet	Most Common Width Feet	Harrowed Per Day Acres	Number Averaged	Adjusted Acreage	Allowance for Each Foot in Width Acres	Harrowed Per Day Acres	Number Averaged	Adjusted Acreage	Allowance for Each Foot in Width Acres
Two	4-8	6	7.2	159	6.5	0.50	7.5	147	6.7	0.60
Three	5-10	6	7.5	163	6.8	.60	9.1	165	8.0	.70
Four	6-10	8	12.8	414	11.5	.80	15.4	432	14.0	.90
Five	7-10	8	11.3	7	12.0	.85	13.4	7	14.5	.95
Six	7-10	8	15.4	16	13.5	1.00	18.0	19	16.0	1.10



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All adjusting is done on top of ground. No intricate mechanism. All working parts enclosed. Perfect lubrication system. Unaffected by sand. Built for the particular requirements under which it must work. Absolutely guaranteed.

Everyone interested in irrigation should have our illustrated Catalog No. 80. It tells all about this pump. Write for it today.

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after his commission of five cents per bushel had been taken out. Thus, after we had actually paid out 50 cents in the production of the crop, had spent four months in growing it, had taken the risks of drouth, insects, fungus diseases, and so forth, we had a profit of 10 cents per bushel.

As a matter of interest, we followed certain shipments of these potatoes which, while they may not fully represent the average, so nearly is this the case that the results are worthy of note. It was found that certain of the shipments upon which returns had been made at 60 cents a bushel were actually being sold to jobbers for $1.00 per bushel, or $3.00 per barrel. The jobbers in turn sold the potatoes to certain retailers, at an advance of 25 cents per bushel. The retailers, who were men running small stores in the city, were retailing these same potatoes to their customers in small quantities at 10 cents a quarter of a peck, or at the rate of 40 cents a peck or $1.60 per bushel.

Here, then, is a difference in price between the producer and the consumer of one dollar per bushel; or, in other words, the crop after it leaves the grower's hands suddenly takes on a value of 40 cents per bushel to the commission man; 25 cents to the jobber, and 35 cents to the retailer.

Putting it in another way, the grower, after four months' effort, realized a profit on his investment of 20 per cent; the commission man, who acted in the dual capacity of commission man and wholesaler, after holding the product an average of 48 hours, realized a profit of sixty-six and two-thirds per cent; the jobber, on a short turn-over, 25 per cent, and the retailer, on an average holding of probably three days, 28 per cent.

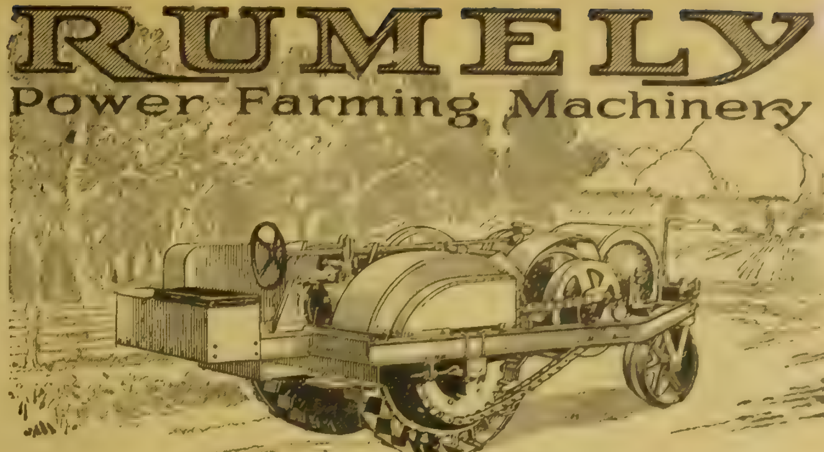
These are statements of fact which in a more or less degree will be found to apply to nearly all of the perishable crops that the farmer produces. We make no comment at this time, being content with pointing out the necessity of organized, intelligent effort to bring the producer and the consumer a little closer together.

Our capacity for doing is the true measure of our knowledge and ability. We hold that the farmer who develops and perfects a fine farm to its highest degree of efficiency is the master of a grand art and the possessor of a rare and profound degree of knowledge. Let him take courage, for slowly the rest of mankind is coming to see this truth. There is a dignity and elevation in the encomium, "He is a fine farmer," that has never been felt and accepted among men as it is today.—H

Soil farming is common sense farming. It is taking off crops and restoring used plant food soil fertility. Taking off crops and returning chemical fertilizers is not soil farming, though at times chemicals must be restored so that the land can be put quickly into shape to grow crops that will enrich it.

Cooperation will suceed only where the neighborhood is alert to the benefits and responsibilities of get-together action and where only matters that the individual cannot as well do alone are taken up.

The cooperative corporation offers no incentive to the speculator.



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COVER CROPS

Fenugreek
Melilotus
Burr
Clover
Vetches

produce humus and nitrogen in the soil — the two big essentials in groves and orchards. From our studies of the needs of the citrus belt this year, we are strongly recommending the following:
FENUGREEK: is a rank and rapid grower, producing successfully on poor soils.
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Crops

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Rural Californian combined with the California Cultivator

A Journal of Horticulture and Agriculture

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Thursday, Sept. 10, 1914

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We guarantee our subscribers against loss through dishonesty of any advertiser in the Cultivator. We do not attempt, however, to adjust trifling differences between subscribers and honest, responsible advertisers, nor will we pay the debts of honest bankrupts. Notice of complaint must be sent us within 30 days from date of the transaction. and the subscriber must have mentioned the Cultivator when writing the advertiser.

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DRAW A MAP

Here's a hint for the youngsters on the farm. Everybody is talking war and reading war, and some not very understandingly. As a suggestion in this direction we have a hint for the boy and girl readers of the Cultivator. Take a piece of tracing paper, or if you haven't that, ordisioner Weldon's latest crop report you will have to work very carefully. Lay it over the best map of Europe you can find. Draw the outline of each country and trace in the rivers and locate the larger cities. Then whenever a hamlet is referred to or a range of mountains, take a pencil and work it into your map. Each one will end the war with a better understanding of European conditions.

AN OPPORTUNITY.

The greatest opportunity to study farm power and improved farm implements will be given at the world's fair at San Francisco next year. There will be a few products of the farm which have never been exhibited before, for the world has been scoured to secure new plants which will do well in other parts of the earth. But these will not be so strange nor so striking as the improvements which have been made in the mechanics of farming. Every farmer on the coast should plan for a day or a few days in the farm power and implement section of the exposition.

GOOD CROPS.

Deputy Horticultural Commissioner Weldon's latest crop report shows nearly all deciduous fruits close to normal. This report is made out from various county horticultural commissioners' estimates and shows conditions of crops in the various counties of the state. Walnuts we note are light. Los Angeles County's estimate is for 85 per cent of a crop; Orange County, 60 per cent; Riverside, 100; San Bernardino, 80; Santa Barbara, 60; Sonoma, 100; Stanislaus, 100; while Ventura reports an 80 per cent crop. Orange, Los Angeles, Ventura and Santa Barbara are the four largest producing counties of the state, and it will be noted that their estimates are all of a short crop. Prunes are still lower as to total output, though Santa Clara, the principal producing county, makes no report, and the other larger producing counties report from 20 to 80 per cent of a crop. As a rule the olive crop is reported close up to 100 per cent of normal.

DIVISION OF THE FUNDS

The special license tax collected from automobiles registered in California aggregated $1,170,986.75. It has cost to administer the law $114,421.00. This leaves a total for division between the various counties and the state road maintenance fund of $1,056,565.75. We believe the half which comes to the counties may be disbursed as each county decides, but the half which remains in the hands of the state is solely for maintenance of the good roads constructed under the $18,000,000 bond act. Los Angeles County pulls down the largest amount, receiving $181,747.90; San Francisco is next, receiving $55,758.88; followed by Alameda, $36,562.39; San Diego, $24,578.19; Fresno, $19,495.25; Santa Clara, $17,386.51; Orange, $15,758.56; Sacramento, $14,658.90; San Bernardino, $13,669.65; San Joaquin, $11,931.06; Tulare, $10,430.78; Kern, $10,080.45.

This division is on the basis of registration from each county.

VETCH SEED

The department of agriculture has issued a circular regarding prices for imported crimson clover and hairy vetch seed. The statement is made that there is more vetch seed in the United States today than there was a year ago and that the boost given to prices is entirely uncalled for, being the result of operations of speculative holders of the seed. Before the European war conditions arose crimson clover seed sold for four and five dollars a bushel. It was almost immediately jumped to $7.50 to $9 per bushel. Since the price was advanced heavy importations have been made, and it is asserted these importations were laid down in this country at the same price as that originally sold at four and five dollars.

Regarding vetch the circular states: "A somewhat similar condition exists with reference to hairy vetch seed. There has been approximately six-sevenths as much seed imported since November 1, 1913, as in the year previous. This shortage, however, is partly counterbalanced by the increasing domestic production of hairy vetch seed."

STATE FAIR

Next week the state fair will occupy the attention of agricultural California. There will be the usual locomotive head-on collision, elaborate fireworks, competitive displays for $25,000 worth of premiums and, of course, harness racing, for which there will be $30,000 paid out in prizes. In spite of the head-on collision in which two or three thousand dollars of junk will be reduced, and a few other similar attractions, it will be a really truly agricultural fair.

While this is the sixty-first California fair, from an agricultural standpoint it has had many ups and downs, especially downs. But for the past few years an effort has been made to redeem it, and last year's report, which Cultivator readers saw, showed that in machinery at least it was a wonder. This year we believe will show an equally great exhibit. We also believe that in live stock the coming fair will show the greatest ever presented to stock people of this state. There will be no fair in 1915; the energies of the entire state will be centered on the exposition, and that and the coming of the exposition is giving an especial impetus to the plans for this year's fair. The dairy contest is attracting considerable attention and the dairy building will be the gathering place for dairymen from all parts of the Pacific coast. The railroads are offering special rates and we look for the largest attendance ever.

AGRICULTURAL ENGINEERS

We have before us a certificate duly engraved and very similar in appearance to the ordinary certificate of title issued by record searchers at every county seat, excepting that in this case the certificate is issued by a firm of agricultural engineers as to physical, chemical and economic survey made of certain described property. The certificate reports investigation of weather conditions taken from reports of the nearest recording station — the particular certificate which we have gives maximum and minimum temperatures during a period of 48 years — also many other points regarding the weather; then comes the soil, its classification, depth, alkali content and other information; water, source of supply, regularity of flow, if from stream, or depth of stream, if from wells; drainage; economical conditions; crops which the engineers would recommend for that particular locality. In general it is a very complete document.

For the practical California farmer perhaps such a document might not be necessary, though we believe it would have material value, but to the Easterner coming to conditions which he does not fully understand and for the capitalist who would develop large tracts, it would be of great benefit and it appears to us that there is a field for this class of work. It will probably save many a dollar and aid in financial success of many projects which will develop California.

Agricultural News Notes

The American Gladiolus Society held its 5th annual meeting at Boston, August 19.

The apple crop of Canada is now estimated at 70 per cent of normal the country over.

The International Livestock Exposition will be held in Chicago, November 28-December 5.

Oklahoma has a state melon growers association which this year marketed the produce of its members at satisfactory prices.

Madagascar shipped lima beans direct to the United States for the first time in 1913. Several direct shipments have been made this year.

The mine production of gold in California in 1913 was $20,406,958, an increase of $693,480 more than in 1912. This year's output was the largest in 31 years.

A delegation from the Argentine Republic is visiting California to study agricultural conditions and take back suggestions for the benefit of Argentine's advancing agricultural industry.

Agricultural fairs among the Indians of the reservations are being strongly urged by the commissioner of Indian affairs. A great many of the reservations are now holding their harvest fairs.

A dollar a pound is the price reported for feterita seed grown in Texas. The new hay is proving very satisfactory in that state, but it is not probable that dollar a pound prices will long prevail.

Both the San Francisco and the San Diego exposition managements assert that their expositions will in no way be halted by the European war. Even foreign exhibits, they declare, will practically all be made as planned.

A fine of $200 and a jail sentence of three months was this month imposed on a New Jersey seedsman, who had sold millet for red clover. It was claimed that he had bought the millet seed for $1.75 a bushel and sold it for red clover at $10 a bushel.

The Florida Citrus Exchange has offered to the Isle of Pines Growers' Exchange the use of its immense sales organization in the marketing of Isle of Pines fruit. This elimination of competition would much lengthen Florida's shipping season.

Every creamery in Kansas now buys cream on a quality basis. Under direction of the state dairy commissioner every creamery in the state agreed to try out the plan for one month. It proved so satisfactory that all have now permanently adopted it.

The Southern Cultivator, anent the cotton selling problem, says: "Cotton is worth 12 cents and any man who sells for less or would buy it for less becomes a robber of the public and general good to that extent. This is putting it a little strong, but it is true. Cotton will keep. It will never be worth less, but when the war is over, will increase in price. So why give it away now?"

The National Dairy Show will be held in Chicago, October 22-31. During the week of the show 15 associations whose interests are allied to the dairy will hold their annual meetings. Among these are the Holstein-Friesian Association of America, American Jersey Cattle Club, American Guernsey Cattle Club, International Milk Dealers' Association and Milk Producers' Association.

Agricultural News Notes of the Pacific Coast

Northern California

Truckee is shipping thousands of sheep and lambs.

The university farm will make an exhibit at the state fair.

The last of Shasta County's pears were shipped September 1.

Newcastle, Placer County, has shipped 1500 cars of fruit.

Another unit of highway work is being started in Solano County.

Sutter County's almond crop will exceed that of any preceding year.

The dairy industry is growing very rapidly at Anderson, Shasta County.

The Happy Valley Land Company has a new 80,000,000 gallon reservoir.

Butte County estimates that the coming orange crop will be the greatest ever.

Hundreds of acres of fine lands in Yuba County will be flooded for rice culture.

Lassen County farmers have organized a $65,000 company for increasing irrigation facilities.

A sale of 100 bales of hops was made last week at Cloverdale, Sonora County, at 20 cents.

Movies have been made of the deciduous fruit growing and packing industry near Oroville.

The creamery at Anderson, Shasta County, has a capacity of 20,000 pounds of butter monthly.

A large tract of rich mesa land near Redding has been purchased and will be subdivided for small orchards.

Glenn County poultrymen are working vigorously for the success of their poultry show at Willows, November 18-21.

The management of the state fair announces that a large exhibit of cavalry horses will be made at the coming fair.

Table grape growers are hoping the European situation will enable the development of cold storage grape business.

The board of supervisors of San Francisco has completed plans and specifications for Hetch Hetchy storage reservoir.

Sacramento Valley farmers paraded in the streets of San Francisco and other bay cities and circulated literature opposing the eight-hour bill.

The Sacramento Valley Irrigation Company will make material improvements in its holdings in Glenn and Colusa Counties in the near future.

The Humboldt County farm bureau is now expecting to have an assistant farm adviser who shall be an expert in lime and its application to lands.

Plans are being made for the formation of the American River Irrigation district involving 18,115 acres in Auburn, Fairoaks, and Orangedale sections.

A mining company at Grass Valley, Nevada County, has relieved shortage of supply of water in some orchards by turning over 130 miners inches to the irrigators.

A filing has been made on a water appropriation of the Feather River below Oroville for sufficient water to cover 37,500 acres on the east side of the river near Palermo.

Central California

Table grape picking is in full swing at Reedley.

Alfalfa prices in the San Joaquin Valley are running from $6.00 to $8.50.

Honey producers of the San Joaquin Valley are holding for higher markets.

A large ranch in San Benito County has been stocked with young pheasants.

The demand for space at the Fresno County fair is much greater than ever before.

Tulare and Kern Counties joined in the construction of a building at the San Diego exposition.

Three apple packing houses were destroyed by fire at Watsonville recently. The loss was in excess of $30,000.

Prune growers near Hollister are making deliveries of cured fruit, the orchards running about half the usual tonnage.

Estimates in Tulare and Fresno Counties show the coming citrus crop to be about 75 per cent of that of last year.

Tulare County reports an exceptionally heavy broom corn crop. It is claimed that this year's prices will reach from $200 to $250 per ton.

Manager Madison of the Raisin Growers' Association is advising not to pick raisin grapes until they have secured their full supply of sugar.

The Visalia Cooperative Poultry Association has succeeded so well in purchasing feed supplies for members that it is now purchasing groceries.

Fig growers are pleased with the general condition of the market and some of the more enthusiastic predict a five and a half or six cent price.

Visalia has an egg plant fruit laid on the table of its chamber of commerce which measures nine inches in diameter and weighs five and a half pounds.

New varieties of Grecian currants or grapes have been tested by the United States department of agriculture on an experimental plat near Fresno.

Children laboring in the cooperative cannery at Porterville are appealing to the board of school directors to defer the date of school opening one or two weeks.

A committee of the Turlock irrigation district has reported in favor of the appointment of a district manager who shall have entire control of the affairs of the irrigation system.

Farmers of central and northern California put in a full day's work at the polls last Tuesday distributing literature on the eight-hour measure which will be voted on in November.

Manager Madison of the grape growers association says that the association intends to maintain the sugar test for grapes. There have been rumors that the test would be discontinued.

Plans are being completed for a state dairy fair to be held at Modesto, Stanislaus County, October 15 to 18. At the same time there will be held meetings of the state dairy association and the California Creamery Operators' Association.

Southern California

Plans for a public market are being made for Riverside.

Grape day was observed on September 9 at Escondido, San Diego County.

Brawley, Imperial County, shipped its first carload of 40,000 pounds of honey, August 31.

The Arboricultural Society of Southern Californa meets at Riverside today and tomorrow.

Redlands is making an exhibit of cereals grown in the mountains back of that city at an altitude of 7300 feet.

The Pomona cannery has closed its season on peaches. It established a record by putting up 2,000,000 cans of peaches.

Calipatria, one of the newer towns of the Imperial Valley, has installed large stock corrals and chutes for cattle shipments.

The San Antonio Fruit Exchange with headquarters at Pomona shipped practically 3000 cars of oranges during the last season.

An orange grower of Covina advertises his belief in the use of lime in the orchard by spraying an entire orchard with whitewash.

Farm Adviser Parker of Ventura County is on the ground ready for duty. His headquarters will be in the new courthouse at Ventura.

Monrovia, Los Angeles County, made Thursday, August 27, anti-weed day, and the entire town took a vacation to observe it properly.

San Bernardino and Riverside are about to enter a legal contest over water rights now used by Riverside and claimed by San Bernardino.

A walnut grower at Whittier, Los Angeles County, recently lost $6,000 in the burning of a large quantity of walnuts stored in packing house.

Late blight developed in some of the walnut orchards of Southern California, and the output will probably not be as heavy as anticipated earlier.

A French manufacturer of perfume is looking over the California field and expects to establish gardens for the growing of flowers for their perfume.

The fifth annual meeting of the La Verne Orange Growers' Association was held last week and the manager reported 847 cars total shipments for the season.

Los Angeles bankers are aiding in the financing of cotton growers of the Imperial Valley who are unable to dispose of their crops because of war conditions.

Ranchers of San Fernando Valley in Los Angeles County are planning the expenditure of two and a half million dollars for distribution of waters over the entire valley.

After a meeting of the lima bean growers' association at Oxnard recently a 35-cent advance was made in the price of limas. Contractors are making every effort to discourage the association.

Horticultural Commissioner Bishop of Orange County reports the black scale about the worst ever. The cool season, together with more or less fogs and moisture, have been favorable to the growth of the scale.

The Coast

Utah farmers are holding wheat at still higher prices.

The live stock sanitary board of Arizona now employs 73 inspectors.

Barley at Castlebrook, Washington, is running 20 to 30 bushels per acre.

Farmers of Okanogan County, Washington, are sowing winter wheat.

A serious epidemic of hog cholera has broken out in certain sections of Utah.

There will be more extended planting of cotton in the Gila Valley of Arizona.

Experts from the agricultural college of Berlin are studying potato diseases of Utah.

Wheat growers near Bozeman, Montana, have sold most of their crop at 75 cents per bushel.

The first load of long staple cotton was delivered at the gin at Chandler, Arizona, on August 28.

Threshing has been finished at Drain, Oregon. Oats are now selling at 85 cents and wheat at 95.

Later reports are in effect that the production of alfalfa seed in the Yuma section will be rather lighter than usual.

Chandler, Arizona, is manufacturing brooms from Chandler grown corn. The factory is managed by the Farmers' Union.

Quarantine of the state of Utah because of infestation of sheep scabies was lifted on August 24 by the department of agriculture.

A creamery and cold storage plant at Nampa, Idaho, together with several hundred pounds of butter, went up in smoke last week.

Steps are being taken to organize the farmers of the Salt River Valley, so as to market products and protect the interests of the farmers.

The sugar factory at Ogden, Utah, announces that it will stand by its contracts in selling sugar at prices that prevailed earlier in the season.

The Inland Empire of Western Washington is trying storage houses built of concrete and of vitrified brick to determine which is preferable.

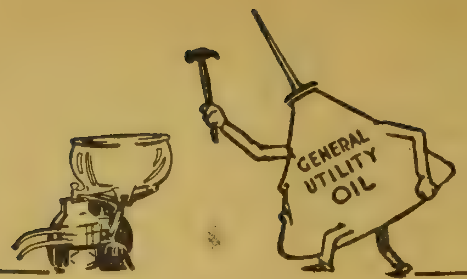
Director Forbes of the Arizona agricultural experiment station advises a more consistent fight against Johnson grass, which is a great pest to the state.

Hop growers of Washington and Oregon are elated at the war prices on hops. Some enthusiastic ones believe that a dollar price will yet be reached.

The state tax commission of Arizona estimates the number of range cattle in that state as 704,379, and that their value is approximately $24 per head.

Extensive feeding experiments are being made on range steers at Union, Oregon. Alfalfa and barley are both being used and alfalfa shows by far the greater increase.

The English sparrow has finally found a friend in the alfalfa grower of Utah, who declares that this universal pest has taken up the active work of exterminating the alfalfa weevil.



The Wrong Oil Ruins Your Separator

To lubricate your separator with ordinary or general utility oil is one of the quickest ways of sending it to the junk pile. You need a special oil for the finely adjusted mechanism of this delicate farm machine.

Standard Hand Separator Oil

is made especially for cream separators—and for that reason it will most satisfactorily lubricate your separator. It keeps the bowl spinning smoothly and enables you to get *all* the cream. It doesn't "gum." Saves repair expense. Lengthens the life of your separator. Ask your dealer for Standard Hand Separator Oil.

Standard Oil Company
(California)

You Can Feed—
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Live Stock and Dairy

SUGGESTIONS FOR THE CONTROL AND PREVENTION OF HOG CHOLERA

From Circular of the United States Live Stock Sanitary Association.

The extreme prevalence of hog cholera last year and the great losses sustained are still vividly impressed upon the minds of farmers and breeders, and considerable thought is undoubtedly being given as to the best way and means of preventing a like occurrence this year.

It must be borne in mind the disease is of germ origin, and is acquired by hogs through contamination of their food supply. This contamination may take place in a variety of ways, principally, however, by birds, dogs and men carrying the disease germs on small particles of dirt or manure gathered up from places where the disease has been or is present.

The majority of hog pens are in a filthy condition, as a result of the accumulation of litter and manure gathered through months and perhaps years. Many times food is scattered in the pens and becomes contaminated by all kinds of filth before being eaten by the hog, hence if cholera has existed the litter and manure has been saturated with the body discharges of sick animals, and is alive with germs.

To control the disease, owners of hogs, must be educated to the importance of sanitary measures, and not be permitted to lapse into indifference because of the possible use of serum as a cure or preventive.

A steady war should be waged on pigeons and crows, which feed in infected pens and carry the disease all over the vicinity. Dogs are frequently carriers of the disease and should not be allowed to run at large, even on owner's premises, if cholera exists in the neighborhood.

Stock buyers, strangers, and neighbors visiting the premises should keep away from hog pens, and the individual owner should not let his curiosity lead him to tramp near or in hog pens belonging to his neighbor.

All outbreaks must be quarantined and only owner or his help allowed to go near the diseased animals. To curtail the losses, the single treatment should be given and the operator and helpers must take the precaution of using rubbers while working, removing and disinfecting them after completion of the vaccination.

Explicit directions should be given by the veterinarian that pens are to be cleaned daily and disinfected with a solution of cresol, U. S. P., six ounces to a gallon of soft water.

Above all, dead hogs are to be buried or burned. Allowing dead hogs to remain unburied, the placing of dead hogs in low places, or dried up water courses should be made a misdemeanor. If no statute covers these matters, then sanitary authorities should adopt regulations which will effectively deal with them.

Wagons used in removing dead hogs, or in drawing away litter and manure from the pens should under no circumstances be taken on to the public highway.

Thorough and complete disinfection of the pens and yards should be practiced daily. using the disinfectant of the strength already described. Where outbreaks occur, stock buyers should be warned against visiting the premises and should be advised of the great danger there is in carrying the infection from farm to farm, and to avoid it by using rubbers, to be removed and disinfected after visiting individual farms, no matter whether cholera exists on the premises or not.

Railroad stock yards are a prolific source of spread, and a regulation should be issued forbidding the removal of hogs from stock yards except for shipment by rail for immediate slaughter. Railroad yards and pens should be cleaned of all litter and manure and then disinfected after each shipment.

Persons delivering stock to these yards should be warned, by posted notices, to avoid going into "yards."

Prevention.

As the disease is without doubt taken up with the food supply, the question arises: How best protect it from infection?

It is suggested small feeding pens be built with closely woven wire fence to which hogs should be admitted only at feeding time. These pens should have a cement floor, which must be kept clean of all litter and manure and then sprinkled with the solution previously mentioned. Troughs should be disinfected and lifted off the floor and exposed to the sun.

Sleeping quarters should be arranged so they can be kept cleaned and disinfected. Good pasture away from water courses and roads is necessary to prevent any infection being carried by stray animals, or from contaminated water.

As a further precaution, not only against hog cholera but against various parasites which swine are often troubled with, a dipping vat can be built with very little expense and a cheap disinfectant used.

The disease is not borne in the air but is acquired by taking into the system the disease germs.

Protect your hogs from coming in contact with sick hogs and protect their food and water supply from contamination.

When the disease has existed, it is wise to provide new quarters entirely for the brood sows. While young pigs from immune mothers carry an immunity for a short time they are liable to infection later if permitted to remain in infected quarters. It is well to plow and seed the old yards.

CUTTING ALFALFA

There is considerable interest in cutting alfalfa hay in the silo cutter so as to secure more compact mowing away and more economical feeding. We have endeavored to get information along this line, and many have claimed that the economy of handling and the more complete consumption by the stock more than compensate for the cost of running through the cutter. We are informed that the Miller and Lux corporation handles much of its alfalfa according to this method. On this point we wrote to Mr. R. L. Adams, formerly connected with the company, but now witth the

University of California. Mr. Adams writes:

"It is entirely practical to mow cut alfalfa hay with the blower. I can not tell you just how much more of the alfalfa you can store in a given space than alfalfa hay, but the quantity is not as great as most people imagine, due to the fact that alfalfa hay will pack down pretty solidly when in the large stack usually built in California. Various estimates by Miller and Lux superintendents ranged from one to one, to one to four, that is, there would be as many times cut hay as alfalfa hay, according to the last figure. My judgment is that the quantity is not more than one and one-half of cut hay to one of alfalfa hay, although the amount might possibly be one to two.

"The feed value of alfalfa is increased since the short stalks will be consumed by the cattle even when rather woody, which will not be the case with straight hay. We found it more economical to handle hay by this method when it was to be used for fattening steers, especially those expected to finish during the winter. Alfalfa so cut was not used for stock cattle.

"The method in handling was to haul the hay directly from the shocks, where it had previously cured for a period of about two weeks, to the cutters, unloading from wagons directly into the cutter and blowing the cut feed to the stack.

"In using this hay to finish steers, the chopped alfalfa was spread in layers, moistened and allowed to thoroughly heat, during which fermentation would take place. Just before being fed to the steers, a certain proportion of ground grain was mixed with the hay, and the whole fed in troughs.

"Since our practice was to stack outdoors the item of saving room was not an important one. The chopping was done to get the greatest feed value from the hay.

"Personally, I believe where facilities are available that it pays to cut all alfalfa hay. This is not always possible for the man with a small acreage, however, because of the extra men needed on the cutter and stack."

HOME-MADE CHEESE

Disastrous butter prices have not been without compensation, for they have driven some dairymen of the Imperial Valley to the manufacture of cheese which is sold on the market so as to bring to the dairymen much better returns than would the butter. Mr. Arthur Fell gives a bit of information as to this venture.

The farmers who are taking up cheese making are mostly Swiss. One dairyman is using the product of 400 cows and for his own people is making a small quantity of Swiss varieties of cheese, but generally the ordinary cheddar type is manufactured and finds ready sale. The dairy referred to is located near Silsbee in the southwestern part of the Imperial Valley. There is another, northeast of Heber, where a Swiss dairyman is manufacturing the milk of 300 cows into cheese.

The local market is caring for much of this cheese, though some has been sent to Los Angeles and met with ready sale. The success of these dairymen and the low prices of butter fat are causing other dairymen of the valley to consider a like venture.

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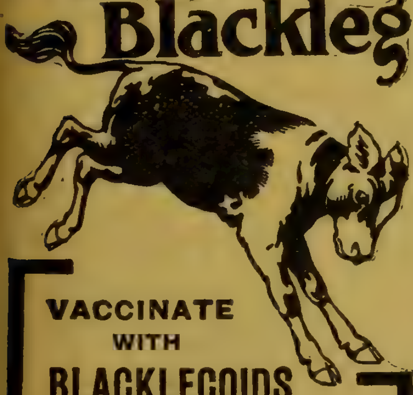

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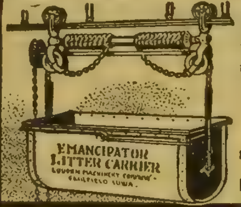
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THE PACIFIC INTERNATIONAL

The Portland Union Stockyards is sending out premium lists and advance information as to the coming Pacific International Live Stock show, which will be held at the Portland Union Stockyards, December 7-12, 1914. Stockmen who are interested should write Secretary N. C. Maris, North Portland, Oregon.

DRAFT HORSE BREEDERS MEET

There will be a meeting of the California Draft Horse Breeders' Association at the Travelers' Hotel, Sacramento, on Thursday evening, September 17, at 8 p. m. Every member of the Draft Horse Breeders' Association as well as everybody interested in the draft horse business is requested to be present.

In buying new cows for the dairy one should buy of dairy farmers who practice rational methods of feeding, preferably from those who do not feed too much grain and rich concentrates. Many cows have been fed so much grain that they have lost their capacity for handling home-grown roughage. Such cows are no longer profitable dairy producers and should be avoided when buying new cows for the dairy.

If you keep cows, you may as well have good ones as the other kind, for a good cow takes no more hay and requires no more attention than a poor yielder. It would seem that all farmers, whether they consider themselves dairymen or not, would wish to improve their herds.

Health among live stock, as well as among human beings, depends largely upon healthful surroundings. No farmstead can be healthful that has scattered around it a lot of decaying rubbish.

Veterinary

Answers in this column by Dr. Wm. Petrie, 2714 South Harvard Blvd., Los Angeles, are without charge. For immediate mail answer remit $1.00. In writing questions give full symptoms or particulars of injury of animal.

Ulcer on Breast

Have a mule, seven years old, that has a large sore on the middle of the breast, a little in front of the legs. It is also swollen some around it. What shall I do with it?—Subscriber, San Fernando.

This is probably caused by the mule leaning against the manger while eating. Remove the manger or make it higher or lower. There may be a core in the center of the bunch. Split it open up and down through the center and be sure to cut it deep. Then dress it once a day with a solution of permanganate of potash, one-half a dram to the pint of water.

Bloat on Alfalfa

Would you suggest through the Cultivator, general treatment to prevent cows bloating on alfalfa pasture? Also emergency treatment in bad cases of bloat. — Subscriber, Rio Bravo.

When cows feed on clover or alfalfa that is wet with dew or hot from the sun in the middle of the day they are liable to have indigestion and bloat. They usually eat too much anyway and if only allowed to be in pasture for two or three hours after the dew is off, and a short time again in the evening, allowing the rest of the time for ruminating, they would get enough to eat and do better and there would be very few cases of bloat. The best remedy for bloat is a pint of raw linseed oil with two ounces of turpentine in it. If necessary repeat the dose in an hour or two. Also tie a large hay rope in the mouth. The cow trying to get the rope back where she can chew it will cause the gases in the stomach to be regurgitated, which relieves her very much. In case of extreme bloating it may be necessary to puncture the side and let the gas escape that way. This is best done with a trocar and canula, but a common knife plunged in and turned a quarter way around has saved the life of many a good cow. What you do, do quickly, for extreme cases do not last long.

Enlarged Quarter

I have a Jersey cow that seems to be in perfect health except that the right front quarter of the udder is quite hard. It is as large as if full of milk, but we only get about a half-pint of milk at each milking. The milk seems to be all right and it does not hurt her to rub or squeeze the quarter. Since she was bred July 6 it is growing larger. We feed her green alfalfa twice a day and plenty of alfalfa hay. She was fresh January 16 and is giving three quarts of milk from the other three teats. We do not use the milk from the swollen quarter.—Subscriber, Lancaster.

The enlargement may be due to a tumor growing in the udder or it may be due to an abscess. If it is due to an abcess it will break inside and the pus come away with the milk. If it is a tumor very little can be done with it. Bathe the quarter with warm water every time you milk and rub it with the hands a great deal. Be careful to milk out all you can. Make an ointment of half a pound of lard, half a pound of vaseline and four ounces of pine tar. Heat them and mix while hot. Rub it on the quarter once a day.

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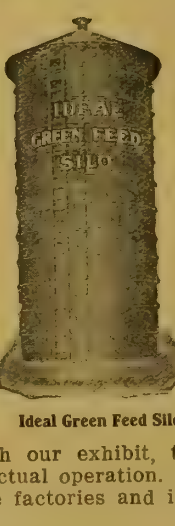

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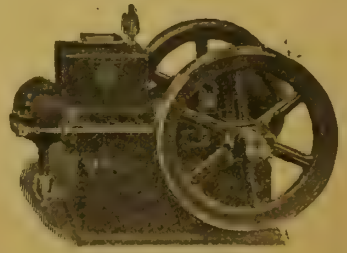

Alpna Gasoline Engine

Profit in the Poultry Yard

MARKETING POULTRY PRODUCTS

Written for the California Cultivator

By Jean A. Koethen.

It is one thing to raise chickens and quite another to sell them at a profit; one thing to breed your hens up to laying 180 eggs a year and another thing to get the highest average price for the eggs. Marketing is a matter of initiative and business ability; it is also a matter of conscience and common sense, and these last two qualities are not quite so rare, I hope, as the first two.

I mention conscience here, because I fear there are not a few people raising poultry who would not scruple to sell eggs two weeks old as "strictly fresh" if they thought they could "put it over" the other fellow, and I know there are breeders who wouldn't hesitate a minute to sell a five dollar cock for twenty-five, because I got caught that way myself once. That particular breeder is out of the poultry business now, and the people who sell ancient eggs as "strictly fresh" will be.

Parcels post seems likely to change our methods of marketing considerably, that is, it will if the producer adapts his methods to it. But you can't send "just any old thing" to the particular consumer by parcels post.

POULTRY SHOW DATES

Sacramento, Sept. 12-19, 1914, State Fair Poultry show, J. L. McCarthy, secretary, Sacramento, Cal.

Riverside, Oct. 13-17, 1914, County Fair Poultry show, E. I. Hammond, secretary.

Anderson, Cal., Oct. 22-24, 1914, O. W. Dais, secretary.

Stockton, Cal., Oct. 28-31, 1914, W. H. Mackay, secretary.

Sacramento, Cal., Nov. 2-7, 1914, C. A. Wilkins, secretary, Sacramento, Cal.

Santa Cruz, Cal., Nov. 11-14, 1914 inclusive, E. J. Harran, secretary, Santa Cruz, Cal.

Petaluma, Cal., Nov. 11-16, 1914, Thomas McGuire, secretary.

San Mateo, Cal., Nov. 12-15, 1914, Fred West, show secretary, box 701, Burlingame.

Willows, Cal., Nov. 18-21, 1914, Otto F. Schuchard, secretary.

Oakland, Cal., Nov. 24-29, 1914, Chas. G. Hinds, secretary, 535 42nd street.

Pasadena, Cal., Dec. 1-5, 1914, M. D. Cartwright, secretary, Pasadena, Cal.

Modesto, Cal., Dec. 2-5, 1914, A. D. Roberts, secretary.

San Francisco, Cal., Dec. 8-13, 1914, inclusive, W. H. Ingram, secretary, Fruitvale, Cal.

Porterville, Cal., Dec. 15-17, 1914, A. D. Fawcett, secretary.

Phoenix, Ariz., Dec. 23-26, 1914, Arizona state show.

Newburg, Ore., Jan. 5-9, 1915, C. Duer, secretary.

Coeur d'Alene, Idaho, Jan. 6-9, 1915, O. A. Laaks, secretary.

Los Angeles, Cal., Jan. 6-12, 1915, Henry H. Mumford, secretary, Prospect avenue, South Pasadena, Cal.

Albany, Ore., Jan. 7-10, 1915, E. Schoel, secretary, Albany.

Tacoma, Wash., Dec. 29-Jan. 2, 1915, J. A. Caddey, secretary.

The commission man, for whom no one has a good word, took everything, rots, cracked eggs, little eggs, big eggs and most of the profits, but at least, he took them. The consumer demands that we use our poor eggs at home and sell only what is worth buying. He also refuses to pay any more for it than he would pay his grocer, and this is just where the shoe pinches.

The producer who markets eggs by parcels post must either have several egg customers in the same neighborhood, to whom he can send a good many dozen in the same package, or he must put something else in his package besides eggs, something that will be worth more per pound than eggs, for it is the first pound that costs. The more he can add to his first pound without much additional weight in the packing, the less will be the cost per pound.

Eastern marketing experts are advising the sending of the general produce package, a couple of dozen eggs, a dressed chicken or two, and one or more expensive vegetables, such as asparagus. How this would work in California I do not know, but I am quite sure the eggs and chicken would, and the consumer generally is more particular about his chickens, and more afraid of the shop-offered article, than he is in the case of eggs.

Four things are essential to the man who would sell his poultry products to private customers.

He must have the goods. This sounds dead easy, but it is really the hardest thing of all. In order to market his eggs as "extras" which is what every egg producer wants, he must have large eggs, weighing over 22 ounces to the dozen; they must be all of one color and all the same size. In the San Francisco market only white eggs can be marketed as extras, but there is no distinction in the Los Angeles market, so far as I know, and certainly private customers do not differentiate. Above all things the eggs must be fresh. They must also be clean, for a dirty egg, while it may be alright inside, makes a bad impression.

Market eggs should be infertile. This is not only to satisfy the consumer but to save loss to the producer. Eggs sent to the commission man or big city grocer are candled, and every rotten egg or egg showing chick development is thrown out, which means that the producer has paid freight on them for nothing. It is estimated by the federal government that preventable losses in market eggs amount to nearly 17 per cent of all the eggs produced the country over. Five per cent of all eggs marketed show chick development; five per cent are shrunken from holding, and two and a half per cent are rotten. Doesn't it look as if we ought to "swat the rooster?" In Missouri alone it is claimed the loss from fertile eggs amounts to a million dollars a year.

I am sure that California cannot be as careless in this matter as Missouri, yet, when I used to buy eggs it was almost impossible at certain seasons to get good ones, and I have heard a good many people since make the same complaint. It is all right to use fertile eggs on your own table or to sell them to your next door neighbor if they are perfectly fresh, but when you send them to market or to the fastidious consumer, see to it that they are infertile. An infertile egg, especially one that has been kept in a cool place, will keep almost indefinitely. In fact, they never do rot as fertile eggs do, while a fertile egg, after a few hours in a warm place, is unfit for food.

See that every egg marketed is large and clean and fresh, and every chicken plump and neatly dressed, and you will have fulfilled the first requirement for successful marketing.

The man who has something good to sell must let people know about it. If you want parcels post customers you must reach possible customers by means of a postal card or neat circular, calling attention to the excellence of your product. Sometimes one has friends in the city to whom he can offer his goods. Sometimes names may be gotten from a telephone directory. I think a good many names might be gleaned from the society columns of any big city daily. Such names are usually the names of well-to-do people who should be willing to pay a fair price for a really good article. You will not receive many answers at first, but just one customer means another presently, and if you keep quality in mind, and really do furnish something uniformly better than can be had in the stores, you will succeed ultimately. It takes a long time to work up any sort of a business.

Emerson has said somewhere that if a man has something to offer which is really a little better than others offer, the world will come to him for it, though he lives in the middle of the desert. I don't know whether this applies to poultry products, but it is pleasant to think that it does.

The man who has something to sell must charge a reasonable price for it. Some people are willing to pay five cents a dozen above the regular price for guaranteed eggs, but many are not. Many consumers, I suspect, think that getting in touch with the producer means a little reduction in the cost of living. The producer who is looking for parcels post customers must figure out the cost of his products and the cost of transportation and packing very carefully, and if he can cut the retail market price a little, it will probably be to his advantage to do it, at least till he has worked up a reputation. Sometimes it is a good plan to offer eggs at a given price, say 40 cents, the year round to a steady customer.

(Continued next week)

The Summer Season

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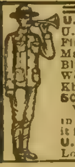

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Questions and Answers

THE EDITOR AND STAFF

Questions to be answered in this department should be received at this office one week before reply is expected. Write plainly on one side of the paper **and sign full name and address. Unsigned communications receive no attention.**

Raising Turkeys

Would an experienced poultryman consider it sensible to undertake to raise 200 turkeys on a 12-acre farm, one-half being in alfalfa, clipping their wings and using sufficient six-foot netting to enclose an acre and moving to fresh ground when necessary until August, then turning them out on barley stubble? Or would there be greater chances for success to go back in the foothills where there is unlimited range?—Subscriber, Merced.

I think you would have a better chance of success with your turkeys on unlimited range, for it is their nature to pick up their living and they are almost certain to be overfed if they are confined, but if you are already on the 12 acres perhaps it would be better to make the attempt where you are. The thing can be done, but 200 birds is a good many for that amount of land, and you will have to handle them very carefully. Do not confine them at all, except for the first week or two. If they are cared for by domestic hens, confine the hens in wire coops and let the turkeys run. If they have turkey mothers let them go where they like after about 10 days (depending on the weather), but see that they are in before the chill of evening comes on. If you have garden or lawn or anything you want to save, fence that in instead of the turkeys. It is not necessary to clip a turkey's wings in order to keep it inside a six-foot fence. Turkeys are so stupid about fences that they will not try to fly out unless they have something to fly upon first. A four or five foot fence with a barbed wire on top is said to be absolutely turkey-proof.—J. A. K.

Geese

Do geese lay both in the spring and in the fall? Is one allowed by law to pluck geese before and after they lay? Are geese troubled by any insects? Do goslings need lots of water?—Subscriber, Roberts.

Geese lay only in the spring, beginning in February, or sometimes as late as March first. I know of no law, but it is considered cruel to pick geese except at moulting time in the spring and fall, when the feathers are loose. When you see the geese begin to pull their own feathers out, you may know that it is time to pick them. Geese and ducks are seldom, if ever, troubled by vermin. If the goose or the hen which hatches them is kept free from lice the goslings will be free, and they are not likely to be troubled afterward. Goslings that are raised to be marketed at 10 weeks of age as "green geese," need not have water except for drinking. Many geese are kept longer than this without water and get along very comfortably, but geese that are kept for breeding should have water to swim in, or fertility will suffer. Goslings should never be allowed to swim till they are fully feathered.—J. A. K.

Chicken Pox

We have a lot of sick chickens and hens. They have yellow-looking pimples on their heads and some of them sit and gasp and some make a noise when they gasp. Many have died. Can you tell me what it is and what to do for it?—Subscriber, Durham.

Chicken pox is not usually as severe as this, but sometimes in malignant cases the disease extends to the throat, false membranes are formed, as in diphtheretic roup, and the bird dies unless it is promptly relieved. As the disease is contagious all sick fowls should be isolated at once. Give the whole flock, sick and well alike, calcium sulphide once a day for a week. Mix it into a moist mash so that each bird gets about a grain each time. Treat the yellow pimples on the heads by removing the crust with the fingers and touching the sore with a feather dipped in creolin. Dust with iodoform, and for several days after grease with vaseline. or lard. If you examine the throat of one of the birds that seems to be gasping for breath,. you may find a diphtheretic deposit, which is at first thin and yellowish, but afterward brown and thick. To remove this false membrane, dip a swab of absorbent cotton in warm salt water (two drams common salt to a quart of water) and gently rub at the membrane until it is loosened. When the membrane is removed, moisten another swab of cotton in a two per cent solution of lysol or carbolic acid and apply a minute or two to the diseased surface. If many fowls are affected this treatment will hardly be possible, but it may be worth while for a few choice birds.—J. A. K.

Legs Weak

Hens are moulting. Have beautiful red combs and look healthy, but one walks as if she was stiff; another walks right down on her legs instead of her feet. There is no dampness or poison around. Might it be anything contagious?—Subscriber, Hollister.

I wish you had told me the breed of these hens. If they are of one of the heavy breeds, Rocks, Reds, Dottes or Orpingtons, most likely they are overfat, and the pressure of the fat in the abdomen, along with the weight, perhaps, of an unlaid egg, paralyzes the nerves going to the legs. If you find, by feeling the abdomen, that they are too fat, the only thing to do is to cut down the ration and make them work harder. Leave the cornmeal out of the mash and put bran in its place. Give them nothing but green feed in the morning. Don't let them get at the hopper of mash till noon, and give the grain (no corn) at night only, in deep litter. If they can be turned out "to grass," so much the better. If they are not overfat I can only suggest rheumatism, which is not likely at this season, or tuberculosis, but please let me hear from you again if my first guess is incorrect.—J. A. K.

Name of Bird.

I saw in your Questions and Answers department of the issue of August 20 request for the name of a bird. From the description given it is undoubtedly the phainopepla. Although its actions are similar to those of the flycatcher it does not belong to that family, but to the same family as the wax-wings. It lives on a mixed diet of seeds, berries and insects, especially millers.—John Krit, Poway.

Curing Lemons

Will you please inform me in your answers in the Cultivator how to cure lemons that have to be picked green on account of being over size?—Subscriber, San Diego.

When the lemons are needed for immediate shipment the only treatment necessary is to store them so that they do not receive too much air or where the heat is so great as to shrivel them. The best lemons are picked perfectly green. Some growers leave them in ordinary orchard picking boxes, laying paper over them to prevent excess evaporation; others stack and surround with tents, watching closely the sweating process and ventilating as required. When wanted for immediate shipment it has been found desirable to store in tight room and raise the temperature with moist heat, usually by placing buckets of water over oil or gas stoves, maintaining the temperature of the room at between 90 and 95 degrees F. The curing is accomplished by this process in from one to two weeks. We would suggest that the inquirer write the United States Department of Agriculture, Washington, D. C., and ask for G. Harold Powell's "Status of the American Lemon industry," a reprint from the Yearbook of 1907.

Brown Apricot Scale

Please give name of insect on apricot twig which I send.—Subscriber, Lankershim.

This is the brown apricot scale, lecanium corni, which infests prune, apple, apricot and a number of other deciduous trees. It may be controlled by spraying with any strong caustic spray or distillate water mixture. It may be sprayed at any time now, for while it would be more economical to wait until the leaves drop off the scale is not so easily reached as it is before it has reached the hard stage.

Budding Peaches.

When is the best time to bud peaches? Are they ever fall budded as citrus fruits sometimes are? Please give general instruction.—Subscriber, Compton.

Peach trees are usually budded in September in the case of nursery stock and this is a good time for all sorts of fall budding. The stock must be in a good growing condition, so that the bark will slip easily. Bud material should be selected from terminal branches of the current summer's growth and the leaves cut off, leaving about an eighth of an inch of the stems on the bud. These stubs serve as a handle with which to place the bud in the stock. The bud sticks should be kept cool and moist till used and those carried into the field should be wrapped in a damp sack and but one at a time should be taken out as needed. The bundle of sticks may be carried suspended over the back as a man carries a blanket roll. This makes them handy and easy to get as needed.

The most rapid work is done when the budder crawls along on his knees and buds over the seedlings, making a T-shaped incision in the stock an inch or two from the ground. B

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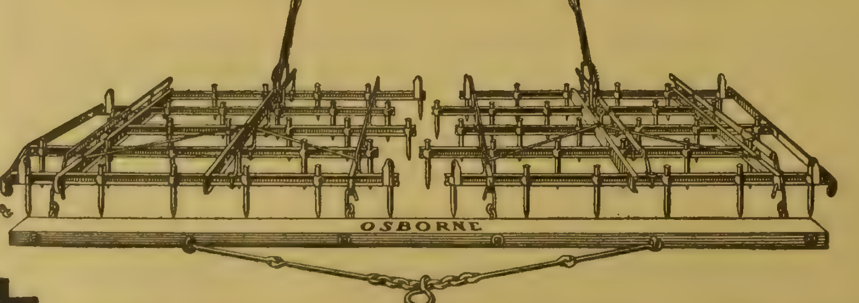

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making the vertical cut first, then making the cross cut upon one side, then straight across the first incision and down again on the other side, the corners of the bark are raised, which admits the bud by simply pushing it under. The buds are most rapidly cut and placed by putting the thumb over the upper part of the bud and making a drawing-up cut (starting the knife about half an inch below the bud) and ending with the bud between the knife blade and thumb with the lower end projecting. This is slipped in at the top of the incision without changing the position of the bud. The bud is pushed into place by pressing down on the leaf stem of the bud.

I have seen budders put in 3500 and 4000 buds a day by this method, keeping two good tyers busy. The buds are tied with cotton string or raffia. If raffia is used it should be wet and cut out in ten inch or foot lengths, whipped out straight and allowed to dry in the shade. It will then work rapidly and not slip after tying. In about ten days after budding the strings should be cut by passing a sharp knife blade across them on the opposite side from the bud. Budding sprouts on trees in the orchard is done in the same manner.—J. W. M.

Fall Irrigation of Walnuts

A point in dispute among walnut growers is whether it is better to irrigate walnut trees at this season of the year or not. Some say irrigation now will start a new growth just when the tree should be dormant, which growth will die back eventually. Please give us the benefit of your experience as to what time of the year and how often walnut trees should be irrigated.—Subscriber, Fullerton.

The presumption from the above question is that the walnut trees have had sufficient irrigation to keep them in good condition to this time, but that the ground will be very dry before the winter rains begin if no further irrigation is done. Walnut trees are like all other trees and plants in their requirements for moisture and will give the best returns if the soil is kept damp enough to secure good growth throughout the entire growing and fruiting season. It is true that if a tree is dormant from want of water at this time of year it will begin a new growth if given plenty of water and that there is danger of winter killing the tender growth. This may also happen if early rains come and is likely to do more harm than the application of water to such trees at this time. There is no fixed rule as to time of irrigation nor the amount to be applied, as this depends altogether on the soil and the size of the trees. Sandy soil will require water in smaller amounts and oftener than the heavier soils, but if the irrigation is properly done will not require more water in the aggregate. Large trees require more water because of more foliage through which the water transpires. Water should be given often enough and in large enough quantities to keep the soil constantly damp to a depth of four to six feet from the time the tree begins to grow in the spring until the nuts are gathered in the fall. If this is done the new growth hardens and the leaves fall at the proper time. The hulls open and the nuts drop out clean and the trees do not begin to grow if early rains come nor if the land is irrigated in order to start the green manure crop which should be sowed as early as possible in all walnut orchards.—J. B. N.

Melon Aphis.

There is an insect which kills our melon vines and covers the entire patch. I send leaf completely covered with them. What can we use to save vines?—Subscriber, Orange.

There is practically no saving of this year's crop other than to destroy every vine which is seriously infested. Also be sure to burn weeds surrounding the melon field, that is, any that are green enough to harbor the pest. In this way the next generation of aphis will be destroyed and next year's infestation greatly reduced. Any spray which will destroy the pest is also injurious to the vines.

Legal

Edw. L. Payne, attorney, 301-304 Douglas Building, Los Angeles, will answer legal queries in this department.

Immediate mail replies cannot be given except where fee to Mr. Payne is paid. When replies are wished in Cultivator address query to 115½ N. Broadway, Los Angeles.

Foreclosure

A year ago I purchased by contract a parcel of land and moved my stock and goods on land. Have kept all agreements up to this time, but cannot now make the payment and interest that is due. If the man I am buying from should bring proceedings against me and foreclose, do I get a year's time in which to live on it and if possible to pay up all that should be against it by this time next year? Or can he force me to vacate the place at once? The contract reads, "In case of failure to pay any part, all money at once becomes due."—Subscriber.

You do not get a year in which to redeem. In the case of the foreclosure of an ordinary contract of purchase and sale (I assume your contract is of the ordinary variety), the court would fix a time such as it considered reasonable, which might be 30 or 90 days, but not likely longer than 90 days, within which you would be permitted to fulfill the contract, and if at the end of that time you did not do so, your rights would be forfeited. This answer assumes that the contract you speak of contains the ordinary forfeiture clause. You can put the owner to the trouble of foreclosure, and in that way gain a few months' time, probably, but it is not at all likely that you would gain a year.

Undivided Ownership

A and B own a piece of land undivided. Both have families. Should anything happen to either of them would it tie up the land so the other could not sell? If so, how can one get around this?—Subscriber.

The only way for A and B to avoid possible complications is to divide the property so that each has a certain definite quantity in place of an undivided interest. The death of one would not necessarily cause complications, but it is possible that it might do so.

No Security

I have been freighting distillate for a mining corporation. Can I hold empty Standard Oil barrels for freight due me from the corporation?—Subscriber.

You cannot hold the Standard Oil Company's barrels for money due you from the corporation.

Water of School District

Please advise through your paper how B shall proceed to get permanent legal right to water under following conditions: Trustees of district school offer B privilege of using water of school on B's private property if B will develop the present school water system. Before B goes to expense of developing he wants to be sure of a permanent water right. —Subscriber.

It would seem to me that a grant from the trustees of a certain proportion of the water or of a certain interest in the land and water, where the water is developed, would secure to you the right you desire.

Stockholders' Liability

To what extent can an individual stockholder in a mining corporation, director or non-director, be held responsible for debts incurred by the corporation if other stockholders and the corporation as a whole cannot settle?—Subscriber.

An individual stockholder is liable for his pro rata share of the debts of the corporation, that is to say, his proportion of the debts is the same as his proportion of the issued capital stock. If he owns one-third of that, he is liable for one-third of the debts. The fact that the other stockholders cannot pay their proportion has nothing to do with the question. Of course, if the corporation could pay that would relieve the stockholder, but it is because the corporation cannot pay that the stockholder becomes obliged to pay his proportion. A director can be held liable for more than his proportion, provided he has, in bad faith, joined in creating a debt which should not have been created, and which is in the nature of a fraud upon the company, otherwise a director's liability is the same as that of any other stockholder.

Waste Water

A runs waste irrigating water across B's land on to C. To whom does C look to abate the nuisance, A or B?—Woodlake.

It seems to me that the proper course would be to sue both A and B, as B has no right to permit water to be discharged from his land on to C, even though A is the source of the water, and A should take proper precautions to prevent his waste water from escaping and damaging C.

Inheritance

Parents deed property to son, keeping the right of a life maintenance if they want it from property. In case son dies first, to whom would the property go? What share would son's wife get, when there are no children?—Subscriber.

If both parents joined in the deed to the son and provided therein that they should have a life interest in the property, the life interest would belong to them equally unless restricted by the terms of the deed. In the event of the death of the son first, leaving no other heirs, the property would go to the father and mother in equal shares.

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The 1200-Acre Nursery, growers of 1500 varieties of trees and plants. OREGON NURSERY CO., Orenco, Oregon. Sales office, 522 Chamber Commerce, Los Angeles, Cal.

1000 Avocado Seedlings—Pots, also can furnish nice plants, bare root, at low price. A. A. Quint, R. D. No. 2, Pasadena, Cal.

For Sale—Eureka Walnut Trees, budded on Native Black Walnuts. Choice stock. Order immediately. Don't delay. Wm. Holve, Fullerton, Cal.

Citrus Nurseries, Murphy Oil Company, East Whittier, California. Selected stock for sale; inspection invited.

You Future Nurserymen—Write for prices on special stocks of plants to start business with. Ballou's Nursery, Pasadena, Cal.

Budded Citrus Trees and seedlings at fair prices. Will take auto or land. Butler's Morning Side Nursery, P. O. Box 145, Lamanda Park, Cal.

WANTED.

Wanted—Place as foreman or superintendent. Thorough in all lines of farming, fruit growing and irrigation. Experienced in working all kinds of labor. Address Box F. H., Cultivator.

Wanted—Middle aged man experienced in all kinds of deciduous fruits, desires position as foreman on ranch. Moderate salary; best of references furnished. Address P. M. Y., 1611 So. Grand Ave., Los Angeles, Cal.

Wanted—Pullets—All ages and varieties, and laying hens for spot cash. Write us what you have, giving number, age and average weight. Pioneer Hatchery, 112 East 8th, Los Angeles, Cal.

RABBITS

New Zealand Reds—Prize stock, bucks and does; also thoroughbred Barred Rock eggs for hatching. Mrs. C. Richey, R. D. No. 8, Box 557, Los Angeles, Cal.

New Zealand Reds—Scored and sold on merit. Investigate. Our catalog is free. Caldwell Bros., Los Angeles, Cal., Box 613.

BEES

Bee Keeping pays big; price list bees, instruction books free, samples and prices pure California honey, ten cents. Spencer Apiaries Co., Box 14, Nordhoff, Cal.

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CHEAP
200,000 FEET
All Sizes—Immediate Delivery.

Just received several carloads new and second-hand Water Pipe, Oil Well and Water Casing. Water pipe (per foot), ½-inch, 2½c; ¾-inch, 3c; 1-inch, 4c; 1¼-inch, 5c; 1½-inch, 6c; 2-inch, 7c; 3-inch, 15c. O. D. Casing (per foot), 2-inch, 6c; 3-inch, 12c; 3½-inch, 15c; 4-inch, 17c. Riveted pipe (per foot), 4-inch, 12c; 10-inch, 30c—also surface irrigation pipe. Many other sizes to select from. Prompt shipment. Write, wire or phone. Adams Pipe Works, 2030 Bay St., Los Angeles, Cal. Phones: Broadway 1264—F1917. (Under entirely new management.)

Household Department

HOW BIG WAS ALEXANDER?

A few of the older ones of us who got our first inspiration in the old "Deestrict" school will recall the following found in McGuffey's Readers. Who the author is is unknown and some may say that it has no place as a classic, but the unknown author of more than a half century ago certainly had a horror of the awful tragedy of war, which is felt by some twentieth century people:

How big was Alexander, Pa,
That people called him great?
Was he like old Goliath tall,
His spear a hundred weight?

Was he so large that he could stand
Like some tall steeple, high;
And, while his feet were on the ground
His head could touch the sky?

Oh! no, my child; about as large
As I or Uncle James.
'Twas not his stature made him great,
But greatness of his name.

His name so great? I know 'tis long
But easy quite to spell;
And more than half a year ago
I knew it very well.

I mean, my child, his actions were
So great he got a name
That everybody speaks with praise,
And tells about his fame.

Well, what great actions did he do?
I want to know it all.
Why, he it was that conquered Tyre,
And leveled down her wall.

And thousands of her people slew,
And then to Persia went,
And fire and sword on every side
Through many a region sent.

A hundred conquered cities shone
With midnight burning red;
And strewed o'er many a battle-ground
A thousand soldiers bled.

Did killing people make him great?
Then why was Abdel Young
Who killed his neighbor, training-day,
Put into jail and hung?

I never heard them call him great.
Why, no—'twas not in war,
And him that kills a single man,
His neighbors all abhor.

Well, then, if I should kill a man,
I'd kill a hundred more;
I should be great, and not get hung
Like Abdel Young before.

Not so, my child; 'twill never do.
The Gospel bids be kind.
Then they that kill and they that praise
The Gospel do not mind.

You know, my child, the Bible says,
That you must always do
To other people as you wish
To have them do to you.

But pa, did Alexander wish
That some strong man would come
And burn his house and kill him, too,
And do as he had done?

And everybody called him great
For killing people so—
Well, now, what right had he to kill,
I should be glad to know.

If one should burn the buildings here,
And kill the folks within,
Would anybody call him great
For such a wicked sin?

THE WOMAN WHO WANTED TO KNOW.

Once there was a woman—just an ordinary woman, who had had but meager advantages in the way of an education, but who was vividly alive to the people and things around her.

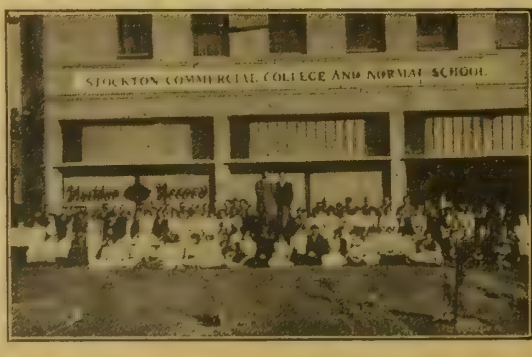
This woman seemed to have an insatiable desire to learn of life, of people, of things. Everything interested her and brought forth the query, "Why is this so?"

The woman was a wife and mother of four children. She did her own housework, cared for and nursed the children through the usual childish indispositions, cooked, washed and sewed; but her ruling passion seemed to be to learn, to know, to understand the deeper meaning of the things she saw.

She could not spend much time outside of the home; but she grasped eagerly at every opportunity to talk to strangers, especially those from a different walk in life; her straightforwardness and intelligent interest drew out these strangers and chance acquaintances, and they gave her of their best. Among these were the doctor and nurses who attended her during her stay at a hospital. They answered kindly and intelligently her eager questions, and at the close of her stay at that hospital she had acquired a working knowledge of practical nursing. Some of the things she learned were the use of antiseptics, fever thermometer, something of dietetics, how to make the bed and care for the room of a patient, and she had lost no time in learning it. Much of this recently acquired information she put into immediate use in the care of her babe, who thrived and grew and became one of her most interesting problems.

Even visits to the dentist had their compensation in what she learned there.

The generally despised agents—book or otherwise—that came to the house were given courteous hearing, and their wares as well as business methods were noted and jotted down in her book of knowledge. The wayfarers who came to her door to ask for work or food (or both) were questioned and counseled and encouraged to talk. In this way she learned much of a side of life of which she would otherwise have had no intimate knowledge. Much concerning



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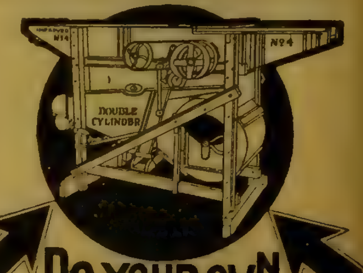

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Bean and Pea Thresher
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will pay for itself many times over in one season. Guaranteed not to split the seed and take all from the vines.

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Send for our free book of valuable information about bean and pea culture. Illustrations and description of our machines. Facts and figures showing results obtained by users of our Hullers —write today. Dept. 11.

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Made-to-measure, all-wool BLUE SERGE SUIT for $15
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causes and motives for crime became clear to her in this way, and served as a foundation for later research along these lines. Time did not permit extensive reading; but what reading she did was carefully chosen and thoughtfully perused.

If strangers of note visited the community, in the capacity of lecturer, social worker, or entertainer, she lost no opportunity to meet and discuss with them, not her work and her surroundings, but theirs. Frequently it was her pleasure to invite such people to her home, which, although plain in the extreme, gave freely of its hospitality. The good will, naturalness and spontaneity found there, atoned for any material lack.

Another source of joy and information was to be found in the casual acquaintances met during her short trips on train or boat. Some really delightful and interesting people came into her life in this way, if for only a few hours. Once it was a mother of three small children who was coming west to join her husband who had come to find and make ready the new home; another time a family coming to spend Thanksgiving with relatives; a college president, a soldier on parole, a civil engineer, a mining expert, a druggist—these are a few of the people who were glad to discuss their particular lines of work with so interested a listener. Their talks were of different things, their language and phrasing different—and she always took a keen delight in these glimpses into the lives of others. The effect it had upon her outlook was broadening and enlightening.

Let it here be said that whether the reason lay in the fact that this woman had fine discrimination in the choice of even her chance acquaintances, or whether it was due to the general excellence of mankind, she never suffered the least annoyance as a result of her unconventional meetings with strangers.

After years of this unremitting search for knowledge, the woman found that she had acquired much that would be helpful to others.

She missed sadly the foundation work of what is commonly known as an education. She longed for a means to express to others whom she could not meet, some of the wonderful truths she had learned. If she could only write books or paint wonderful pictures to tell to those people out in the world the good, the pure, the beautiful possibilities of life, in this wonderful world!

"What is the purpose of my thirst for knowledge?" she would often think, "my desire to know and understand; if knowing, I cannot tell it; if understanding, I cannot help others to understand?" And at times she was puzzled and unhappy. But at last the light dawned upon her. She knew and was satisfied. She was her husband's stay and confidant, her children's teacher and delightful companion, a joy and inspiration to her many friends, and a sympathetic and intelligent companion to all with whom she came in contact. The great and lowly were alike benefited by her rich store of experience; the children of the neighborhood smiled shyly and spoke confidingly to her; the young folks told her of their hopes and ambitions, sure of a sympathetic listener and a wise confidant. Best of all, her small daughter asked of her one day: "Mamma, will I be like you when I am a woman?" "Why do you ask, darling?" she questioned. "I think perhaps you will be much like me." "Well," said the child, "you are the prettiest and best woman I know, and I don't want to be like any one else; I want to be just like you."
—Pacific Homestead.

WORTH TRYING

Strawberry Shortcake.

Two cups sifted flour, one-half teaspoon salt, four level teaspoons baking powder, one-fourth cup butter or part lard and part butter, one cup of milk; sift flour, salt and baking powder out in the lard, then add the milk to form a soft, light dough, turn on a lightly floured board and pat into shape, roll the dough thin with a few movements of the pin; place one layer in a pie tin, brush with melted butter and lay another over it; bake in a quick oven for fifteen minutes; split the cake and lay one-half on a platter with the crust down, spread with berries crushed and sweetened; lay on the other half of the cake, put on another layer of berries and cover with sweetened whipped cream or a strawberry meringue.

Banbury Tarts.

Make a rich pie crust, roll out and cut in a circle. Place in the center a large spoonful of the following: one cup raisins, piece citron, chop these finely, add one cup sugar, juice and grated rind of a lemon, one egg beaten light. Brush over the top with milk in which a little sugar has been dissolved.—Mrs. Alice E. Myers, Angiola.

Lemon Pie.

Two-thirds cup sugar, grated rind and juice of one lemon, yolks of two eggs beaten together; cook on top of stove until creamy. When done, remove from stove and add the beaten whites of two eggs. Fill baked crust and brown in oven.—Mrs. W. B. Ricker, Riverside.

Three-in-One Dessert.

This is a delicious dessert which combines the desirable qualities of pudding, pie and cake in one dessert.

Line a deep pie plate with your favorite pie crust and fill with the following mixture: Mix together one cup sugar, two heaping tablespoons flour and pinch salt. Add butter size of an egg, melted, and yolks of two eggs. Beat all to a cream. Add to this the juice and grated rind of two medium-sized lemons, one cup milk and lastly the whites of two eggs, beaten stiff. Bake one-half hour in rather slow oven. The result will be a flaky crust on the bottom, a delicate layer of cake on top and a dainty lemon filling between. Served with lemon sauce you will have pudding, with meringue you have pie, or simply frosted you have cake.—Mrs. Lily Inglehart, Bellflower.

Simple Strawberry Shortcake.

Make a nice paste for the crust roll out in thin cakes about the size of a breakfast plate. Put in a layer of strawberries with a little sugar sprinkled over, then another layer of dough, another layer of strawberries and sugar, with a top layer of dough. Bake slowly and eat for luncheon or dessert with sugar and butter sauce, or sweetened whipped cream.—Miss Helen A. Lyman, Pittsfield, Mass.

To hurry the cooking process of anything cooked in a double boiler add salt to the water in the outer boiler.

SANITARY WARMING CLOSETS.
PAT. APP. FOR.
MAJESTIC
MAJESTIC
WITH OR WITHOUT LEGS.
ONE QUALITY; MANY STYLES AND SIZES.

Cooking is so important!

Good cooking helps the health and happiness of your family.

Surely you should have a range that will enable you to do your *best* cooking.

"Majestic" makes good cooking easy. It is not just "so much metal put together to hold fire"; each part is scientifically built to do its work **just right.** Made of malleable and charcoal iron, metals that resist rust and wear three times as long as ordinary range metals.

All joints cold-riveted (no putty used)—a Majestic stays tight—holds the heat in, maintaining uniform baking heat with least fuel.

The Majestic provides perfect baking qualities, plus fuel-saving and work-lessening features that you cannot get in ordinary ranges. The little extra it costs is more than repaid by the years longer wear that it gives.

The health and happiness of your whole family is effected by the range you buy. Investigate **thoroughly.** There is a Majestic dealer in every county of 40 states; if you don't know the one near you, ask us, and get "Range Comparison" explaining Majestic ranges fully.

Majestic Mfg. Co., Dept. 203 St. Louis, Mo.

More and hotter water!

Majestic water heating front is fitted with eight hollow pins that extend right into the fire; giving greatest water-heating surface of any range made; heats more water much quicker and hotter than ordinary water front.

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Boy Today
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The health of the growing boy depends upon the food you give him. See that he drinks Ghirardelli's Ground Chocolate. He'll like it and it will do him lots of good. It is a real health food and drink and costs no more than those beverages that are universally considered to be harmful. Begin serving Ghirardelli's tomorrow. It will please every member of the family.

In hermetically sealed cans.

Ghirardelli's Ground Chocolate is the only original ground chocolate. It has been used in Western homes for over a third of a century and its popularity is growing day by day

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Since 1852 San Francisco

Despite the European war there is no raise in prices.

GHIRARDELLI'S
GROUND
CHOCOLATE

San Francisco--Los Angeles Produce Markets

Los Angeles Market

LOS ANGELES, Sept. 9, 1914.

The prices given below, except where otherwise noted, are those made by wholesale or commission houses to retailers, and are intended to give producers the range of the market rather than an indication of prices which they will secure. Jobbers' quotations to producers are not given.

BUTTER

Butter prices remain exactly as last week. Receipts about 50,000 to 55,000 pounds daily.

Prices to trade 4 cents above following quotations:

Creamery Extras	.29
Firsts	.26
Country	.22
Ladle	.21

CHEESE

Prices to trade 1 and 2 cents higher:

Eastern Daisy	.19
California Fresh	.14½@15
Domestic Swiss	.19@20
Imported Swiss	.40
Longhorn	.19½@20
Oregon Triplets	.18@18½

EGGS AND POULTRY

Receipts of northern eggs very light. Advance in prices on all grades.

Prices to trade 3 cents higher than following quotations:

Fresh ranch, case counts	.36
Candled	.38@39
Northern Case Count	.38
Petaluma-Santa Rosa	.39

Price to producer:

Hens, lb.	.14@19
Roosters	.9
Broilers, lb.	.20
Fryers	.18
Roasters, lb.	.17
Turkeys	.18@26
Ducks	.12
Geese	.14
Squabs, doz.	2.00

LIVE STOCK

The following quotations are f. o. b. Los Angeles on all stock:

Hogs, 175 to 200 lbs., per cwt.	10.00
Prime Steers	.7¼@7½
Heifers	.6¼@6½
Calves, lb.	.8½
Sheep—	
Ewes, head	4.00
Wethers	4.25@5.00
Lambs, head	4.50@4.75

POTATOES

Wholesale selling price:

Sweets, sack	2.25
Northern Burbanks, cwt.	1.45@1.50
Shimas	1.55@1.60
Lompocs	2.10@2.15

ONIONS

Wholesale selling price:

Australian Brown, cwt	1.00@1.10
Silverskins, cwt.	2.00@2.25
Yellow Danvers, sack	1.00@1.10
Garlic	.16@17

VEGETABLES

Wholesale selling price:

Artichokes, Northern, doz.	.50@1.00
Beets, doz.	.30@35
Beans, String	.5@6
Lima	.3½@4
Cabbage	.70@80
Carrots, doz.	.30@35
Cauliflower, doz.	1.25
Celery, doz.	.50@60
Corn, Sugar, box	.60@65
Field corn, sack	1.50@1.60
Cucumbers, lug	.35@45
Pickling, lug	1.10@1.35
Egg Plant	.3@3½
Escarole, doz.	.40
Horseradish, lb.	.12@13
Leeks, doz.	.35@40
Lettuce, crate	1.00@1.25
Mint, doz.	.35@40
Okra, lb.	.6-7
Onions, Green, doz. bunches	.15@20
Oyster Plant	.25@30
Parsnips, doz.	.25@30
Peas, lb.	.4@6
Peppers—	
Bell, lb.	.4@5
Chili, lb.	.2½@3
Radish, doz.	.20@25
Rhubarb, box	.80@1.35
Spinach, doz.	.20
Squash—	
Summer, lug	.30@35
Crookneck	.25@35
Hubbard, lb.	.2½@3
Turnips	.30
Tomatoes, lug	.40@50

FRESH FRUIT

Wholesale selling price:

Apples,	
Alexanders	1.25@1.35
Banana Apples	1.25
Bellflowers	.70@90
Gravensteins	.75@1.10
Jonathans	1.35@1.50
King Davids	1.35@1.50
Skinners' Seedlings	.85@1.10
Crabapples	.90@1.00
Bananas	.3½@4
Berries—	
Strawberries, basket	.3@4
Raspberries, basket	.7@8
Blackberries, basket	.3@4
Cantaloupes—	
Locals, small	1.10@1.25
Locals, large	1.50@1.85
Casabas, doz.	.65@1.00
Figs, 1-layer box	.80@1.00
Grapes—	
Cornichon	1.00@1.15
Concord	1.25@1.35
Black, crate	1.35@1.50
Malagas, crate	.75@85
Muscatels, lug	.60@75
Isabella, crate	1.00
Tokays, crate	1.00@1.25
Nectarines, lug	1.00@1.25
Peaches, lug	.60@1.00
Pears, Bartlett, lug	1.20@1.25
Seckel	.85@1.00
Pineapples, lb.	.5½@6½
Plums, lug	1.25@1.40
Quinces	.45@60
Watermelons, lb.	.1@1½

CITRUS FRUIT

Wholesale selling price:

Lemons	5.50@6.50
Grapefruit, Seedless	2.25@2.50
Valencias	2.25@2.50
Limes, basket	1.50

DRIED FRUITS

Wholesale prices to retailers are:

Evaporated Apples, Fancy., lb. bxs.	.7½@10½
Apricots	.9¼@11
Nectarines	.12½
Peaches	.6½@7¼
Pears	.8@12
Prunes	.6@17
Plums	.10

NUTS

Prices named by California Walnut Growers' Association are:

No. 1	.17½
Budded Walnuts	.21
No. 1 Soft Shell Walnuts	.16
No. 1 Hard Shell Walnuts	.15½
No. Twos	.11½

Wholesale price:

Almonds—	
I X L	.22@23
N P U	.21@21½
Drakes, Thin Shells	.18@19
Pecans	.16
Peanuts—	
California, Raw	.6
Japan	.7½
Eastern	.7½
Rice Corn	5.00@5.25

HONEY

Wholesale selling price:

Comb, Fancy, Water White	.15
White	.13
Light Amber	.12
Extr. Water White	.8
White	.7½
Light Amber	.7
Beeswax	.30

BEANS

Wholesale selling price:

Producer's price not far from one dollar under these quotations:

Limas	8.00
Lady Washington	5.75
Black Eyes	8.00
Pinks	5.75@5.85
Lentils	8.00@10.00
Small White	6.50@6.75
Garbanzos	8.00@8.50

RICE

Wholesale selling price:

California	5.00
Broken	4.00

HAY

Buying prices f. o. b. cars Los Angeles:

Barley	10.00@11.00
Wheat Hay	10.00@11.00
Tame Oat	11.00@13.00
Alfalfa	9.00@11.00

GRAIN

Wholesale selling prices f. o. b. Los Angeles:

Corn, Yellow	2.20
Corn, White	2.30
Wheat	2.00
Oats, Red	2.35
Oats, White	1.65
Kaffir Corn	1.90
Millet	3.75
Popcorn	4.75@5.00
Egyptian Corn	2.30
Barley Seed	1.45
Milo Maize	2.00
Cal. Seed Oats	2.25
Sunflower Seed	5.25@5.35

FEED STUFF

Wholesale selling prices f. o. b. Los Angeles:

Bran, Heavy	1.75
Alfalfa Meal	1.05
Alfalfa Syrup, per cwt.	1.05
Beef Scraps	3.00@3.10
Beet Pulp	1.25
Cracked Corn, cwt.	2.20
Cracked Wheat, cwt.	2.15
Cotton Seed Meal	1.85
Blood Meal	3.60@3.70
Bone Meal	2.00@2.10
Bone Green	1.95@2.05
Charcoal	1.90@2.00
Oil Cake Meal	2.05
Fish Meal	3.15@3.25
Rolled Oats	1.70
Rolled Barley	1.30
Middlings	2.00
Oat and Wheat Middlings	1.55

San Francisco Market

SAN FRANCISCO, Sept. 8, 1914.

The prices given below, except where otherwise noted, are those made by wholesale or commission houses to retailers, and are intended to give producers the range of the market rather than an indication of prices which they will secure. Jobbers' quotations to producers are not given.

BUTTER

Butter is advancing strongly, extras being 4½ points above last week. Receipts light.

Prices to trade 4 cents above following quotations:

Fancy Creamery	.32
Seconds	.28½

CHEESE

Wholesaler to retailer.

California Y, American	.14½@15
California Flats	.10½@14½
Cheddar	.20
Oregon Twins	.16

EGGS AND POULTRY

Storage eggs have dropped a cent, but fresh extras are now commanding several cents above last week's quotations.

Prices to trade 3 cents higher than following quotations:

Extras	.38
Storage, extra	.30

Price to producer:

Hens	.15@18
Fryers	.20@21
Roosters, old	.12
Roosters, young	.22@23
Broilers	.18@20
Belgian Hares, lb.	.10@11

LIVE STOCK

San Francisco prices, gross weight:

Steers	.4@7
Cows and Heifers	.3@6¼
Calves, lb., live weight	.6@9½
Hogs	.9@10¼
Wethers	.5@5½
Ewes	.4½@5
Milk Lambs	.6½@6¾

POTATOES

Wholesale selling price:

Delta, Burbanks	.70@1.00
Sweets, cwt.	1.50@1.65

ONIONS

Wholesale selling price:

Yellow, sack	.40@60
Garlic, new	.10@15

VEGETABLES

Wholesale selling price:

Beans—	
Limas, lb.	.2@2½
Wax, lb.	.1@2½
Strings	.1@2½
Cabbage, cwt.	1.00@1.25
Carrots, sack	.35@50
Celery, doz.	.30@40
Corn, Green, sack	.50@1.25
Cucumbers, lug	.20@30
Egg Plant, lug	.35@50
Peas, lb.	.3@4
Peppers—	
Bell, lug	.25@35
Chili, lug	.35@50
Rhubarb, box	.60@1.00
Tomatoes, lug	.20@35

FRESH FRUIT

Wholesale selling price:

Apples—	
Alexander	.50@75
Gravensteins	.50@1.00
Bellflowers	.75@90
Crabapples	.40@85
Bananas, Hawaiian, bunch	1.25@1.75
Cantaloupes, crate	.50@60
Delta, lug	.25@50
Casabas	.50@75
Figs—	
Black, double layer	.50@65
White, box, single layer	.20@35
Grapes—	
Black	.25@50
Tokay	.50@65
Seedless	.40@50
Malagas	.40@60
Muscats	.50@65
Huckleberries, lb.	.8@12½
Nectarines, crate	.75@1.00
Peaches	.25@85
Lugs	.50@75
Pears, box	.65@1.00
Bartletts	1.00@1.50
Canners, ton	17.00@22.00
Plums, crate	.75@1.25
Lug	.75@1.25
Pineapples, Hawaiian, doz.	1.50@2.00
Prunes, crate	.60@1.00
Quinces, box	.75@1.00
Blackberries, chest	3.00
Huckleberries, lb.	.7@10
Raspberries, chest	6.00@7.00
Strawberries, chest	1.50@3.00
Watermelons, doz.	.75@1.50

CITRUS FRUIT

Wholesale selling price:

Grapefruit, Seedless	1.00@2.50
Lemons	6.00@8.00
Lemonettes	5.00@6.50
Limes, cs.	4.25@4.50
Valencias	1.25@2.25

DRIED FRUITS

Wholesale prices are:

Prunes—1913 crop, bulk basis: 30s-40s, 7c; 40-50s, 7c; 50-60s, 7c; 60-70s, 7c; 70-80s, 7c; 80-90s, 5¾c; 90-100s, 5½c. The above are for both Santa Clara and outside; 1912 crop worth practically as much as the new crop: 20-30s, 15c in 25-lb. boxes.

Other Fruits. 50-lb. Boxes—	Standard	Ch.	Extra Ch.	Fcy
Evap. Apples	....	9 c	9½c	10c
Peaches	....	5 c	5¼	6c
Pears	8½c	9 c	10 c	....

RAISINS

The Association has named prices on London layers as given below. Other prices will be named later. Confirmation will only be made subject to pack, especially with reference to time of shipment: 3-crown London layers, 20-lb. boxes, 1.30; 4-crown clusters, 20-lb. boxes, 1.60; 5-crown Dehesa clusters, 20-lb. boxes, 2.25; 6-crown Imperial clusters, 20-lb. boxes, 2.75; 5-lb. boxes, 50c additional; 10-lb. boxes, 25c additional; fancy clusters, 1-lb. cartons, 20 to case, 1.70; fancy clusters, 2-lb. cartons, 12 to case, 2.10; fancy clusters, 5-lb. cardboard cartons, 4 to case, 2.25; bulk layers in 50-lb. boxes, 2.75. Prices guaranteed against decline to January 1st, 1915, and are subject to change without notice.

NUTS

Wholesale selling price:

Peanuts—	
Unpolished	.5@6
Polished	.6@6½
Japanese, Shelled	.6¼@6¾
Italian Chestnuts	.6½@7

BEANS

Wholesale selling price:

Limas	7.50
Pink	4.40@4.50
Black Eyes	6.25@6.50
Cranberry	5.50@5.75
Small White	5.25@5.50
Garbanzos	5.00@5.50
Large White	4.00@4.25
Bayou	5.00@5.50
Manchurian Speckled Bayous	4.40@4.60
Manchurian Butters	4.60@4.80
Manchurian Cranberry	4.00@4.25
Red Mexican	5.25
Horse Beans	1.90@2.00

HONEY

Comb, Water White	.14@16
Amber	.10@12
Dark	.7@10
Extracted White	.7@9
Light Amber	.6½
Dark	.4@5½
Beeswax	.27@32

HOPS

1913

Sacramento Valley	.16½@17½
Sonoma-Mendocino	.18@20
Oregon Clusters	.18
1914 Contracts	.15@16

HAY

Under date of September 5 Scott, Magner & Miller say:

Receipts of hay for the past week were 5060 tons, approximately the same as the previous week. Demand remains light, especially for this time of the year. There is a great deal of hay still in the fields. In many sections, owing to the low prices, farmers have decided to stack it up and cover it as best they can without baling, awaiting a better market. In some sections baled hay is being stacked also.

Fancy hay of either red oat or wheat is scarce and sells readily, while all other grades drag along.

Considerable alfalfa from the river districts is arriving. Owing to the low prices of clover hay dairymen are holding back, figuring to buy cheaper later on.

Offerings of straw are large in country districts, but demand for same is very light.

We quote the average wholesale prices on carload lots of new crop hay on today's market, as follows:

Fancy Wheat Hay, lt. bales	11.00@12.00
No. 1 Wheat or Wheat and Oat	8.00@9.00
No. 2 Wheat or Wheat and Oat	6.00@7.50
Choice Tame Oat	10.00@11.00
Other Tame Oat	7.00@9.00
Barley	6.00@8.00
Wild Oat	6.00@8.00
Alfalfa	6.00@9.00
Stock Hay	4.50@5.00
Straw, new	.30@45

GRAIN

Wheat, Cal. Club	1.75@1.77½
Corn, Eastern Yellow, blk.	1.87½@1.88¾

WEATHER CONDITIONS

For week ending Saturday, Sept. 5, 1914.

Report from the various stations of the U. S. Weather Bureau, by Geo. H. Wilson, director, San Francisco:

	Rainfall Data			Temperature Data.	
	Past Week.	Seasonal to Date.	Normal to Date.	Maximum.	Minimum.
Eureka	.01	.02	.26	60	46
Red Bluff	.00	T	.07	90	54
Sacramento	.00	.00	.02	84	50
San Francisco	.00	.02	.01	64	52
San Jose	.00	.00	.06	76	42
Fresno	.00	T	.00	88	54
Independence	.00	.16	.00	88	52
San Luis Obispo	.00	T	.05	72	48
Los Angeles	.00	.01	.00	86	56
San Diego	.00	.00	.00	76	60

Barley, Feed	1.15@1.20
Oats, White	1.65
Rye	1.55@1.60
Oats, Red	1.35@1.50
Sunflower	5@5½

FEED STUFF

Alfalfa Meal, car lots	11.50@12.50
Bran, ton	29.00@30.00
Feed Cornmeal, ton	43.00
Cracked Corn	43.00
Rolled Barley, ton	25.00@26.00
Rolled Oats, ton	37.00@37.50
Middlings	32.00@34.00
Shorts	30.00@31.00
Oilcake Meal	32.00@33.50
Cocoanut Oilcake Meal	25.00@26.00
Linseed Oilcake Meal	27.00@28.00

Deciduous Fruit Market

CURED FRUIT EXCHANGE BULLETIN

SAN FRANCISCO, Cal., Sept. 1, 1914. —Since our last bulletin conditions in Europe have become worse, and everything now points to a prolonged struggle for supremacy, the result of which will be much hardship and suffering, and those conditions existing over there will, naturally, affect business in this country in a greater or less degree.

There is a great difference of opinion as to the effect of the war on domestic goods used for domestic consumption. Some think that it will make business much more brisk, others that it will have a depressing effect. Business men who have been told that trade will be bright as soon as transportation is wholly or partially restored are apparently more and more skeptical in the matter. They point out that with England policing the North Atlantic as she is, there is no real lack of transportation facilities any longer, but an abundance of ships can be obtained to send products back and forth, if shippers want to send them. The real trouble lies in financing the shipments and in securing aid from foreign countries in restoring a regular and reliable course of business that would permit sales to be made safely when the goods are actually able to be delivered in Europe.

It is argued that there is no use in sending goods to other countries unless those countries are in position to make payment for the goods in some acceptable kind of value. If such payment cannot be arranged for on a regular and settled basis the expected prosperity due to the selling of our products abroad at high prices will not materialize.

Our bankers are using more than ordinary care in advancing money to their customers, and when they do it is only on the most highly approved security; in this they are strictly within their rights.

We have been fortunate so far in having our export shipments go forward and have every hope of continuing to have them do so.

Conditions in the southern states are not good on account of the lack of money, which is necessary for the harvesting of the cotton crop, but arrangements are now under way with the help of the government, by which bankers will finance the farmers and enable them to save their crops. This will make conditions better and will tend later towards bringing a more settled condition in all lines of business.

We cannot too strongly call to your attention that on account of conditions not being quite normal it is most necessary that you use extra care in drying and caring for your fruit, and that in packing you watch your grades so that at all times your grade will be higher, rather than lower, than the standard called for, for some buyers when the market is lower at time of delivery than when the order was placed will examine cars most critically and try to find some excuse for complaint so that they can obtain an allowance or a lower price.

Dried apricots are a trifle weaker on account of war conditions in Europe; peaches a trifle firmer.

Dried apples are going to be very plentiful, and are being quoted at low prices, which also makes it all the more important to keep up our standard of pack, as the eastern trade prefers apples to either apricots or peaches, especially when the prices are lower.

Prunes are now thought to be much less than first reports, and it is estimated that even should the war make it impossible for any large export demand, this country can consume at fair prices the supply on hand, but we are looking later for a good export demand from England, who has to get her supply from this country, consequently the prune market is being held firm with prospects for higher prices.

The home markets for dried fruits are in fairly good shape, and while at first buyers were somewhat timid they are gradually getting more confidence, so we would urge growers who are not members of the exchange to consider carefully market values before disposing of their crop, and hold out for full values.

Don't get frightened and dispose of your crop at low prices to speculators —the darkest hour is always before dawn, so remember that our success is your success, and that we must all stand together and not get weak-kneed.

Every means will be employed to make you believe that others are doing better than you, but true cooperation will win and will ultimately place you in a position where you will be able to receive a just reward for your labor.

Citrus Fruit Market

LOS ANGELES, Sept. 9, 1914.

There is a slightly better tone to the orange market, but there are still great quantities of deciduous fruit being offered. As an indication, yesterday in New York there were 30 cars of California oranges sold and 122 cars of Pacific coast fresh deciduous fruit. Of course all eastern producers are also furnishing great quantities, though many of the earlier fruits are out of cold storage. There are perhaps 3,000 cars of Valencias yet to go. With proper distribution these will command fair prices.

Great quantities of Mediterranean lemons are still coming. Due to arrive during the next few days in New York, 100,000. Notwithstanding that speculators are trying to hold up prices so that they may not suffer too severely on lemons bought earlier on speculation. In many markets lemons are commanding 50 cents per dozen retail, and some jobbers are breaking boxes and selling to retailers in even less than box lots.

Shipments.

Shipments of oranges to date from Southern California since November 1, 1914, 35,873; lemons, 2,677; total, 38,550. To same date last season, oranges, 12,840; lemons, 2,063; total, 14.903. Total citrus shipments two years ago this date, 33,556.

NEW YORK, Sept. 8.—Twenty-eight cars valencias, 1 grapefruit, 1 car lemons, sold. Market strong on Valencias. Prices 10c to 15c higher. Market unchanged on lemons. Weather fair.

VALENCIAS—	Avge.
DeLuxe, Covina Heights Groves	$2.20
Outlook, Covina Height Groves	1.95
Red Raven, P. & Lett	2.10
Squaw	1.75
Rubidoux	1.45
Duarte	2.35
East Highlands, IMP CO.	2.00
Conqueror, Ind. F. Co.	2.05
Freedom, Ind. F. Co.	1.70
Olive Heights, Growers F. Co.	2.60
Angelus, Growers F. Co.	2.15
California, Beauty	1.95
Blue Star	1.55
Tesoro Ranch Blue	3.05
Teso Ranch Red	2.70
Alhambra, ST. Ex.	2.10
Trail, ACG. Ex.	2.35
Canyon, ACG. Ex.	1.75
Daisy, Covina Ex.	2.30
Gladiola, Covina Ex.	1.90
Reliable, ST. Ex.	2.35
Red, C. Covina Ex.	2.40
Glendora Home, ACG. Ex.	2.15
Red Band	2.35
Titus Ranch	2.40
Pronto	1.80
Hunter, ACG. Ex.	1.65
Red C, Covina Ex.	2.10
Conger, Covina Ex.	2.00
Golden Circle, RH. Ex.	1.85
GRAPEFRUIT—HALVES—	
Perfection	$1.05
Golden Rod	.60
LEMONS—	
Limoneiar Co., Selected	4.80
Loma	4.05

PITTSBURGH, Sept. 8.—Four cars oranges, 1 car lemons, sold. Warm.

VALENCIAS—	Avge.
Dos Palmas, San Marino C.	$2.05
Alhambra, ST. Alhambra	2.00
Green Crown, ACG., Azusa	2.05
Martha Washington, OR. Tustin	2.05
El Toreador, San Marino G.	1.85
Don Quixote, ST. Alh.	1.55
Geo. Washington, OR. Tus.	2.00
Cowboy, OR. Tustin	1.80
LEMONS—	
Selected VC. Limco	3.85
Loma VC. Limco	3.35

CINCINNATI, Sept. 8.—Warm. Sold 1 car Valencias. Market is steady.

VALENCIAS—	Avge
Green Crown, ACG. Ex.	$2.10

ST. LOUIS, Sept. 8.—Stormy. Market is easy. Two cars Valencias sold.

VALENCIAS—	Avge.
Green Crown, ACG. Azusa	$2.00
Hesperides, SD, CO. ak	2.00
Red Riding Hood, SD. Co. ak	1.75
Iva, SD. Co. ak	1.50

BOSTON, Sept. 8.—Ten cars oranges, 1 car lemons, sold. Clear and cool. Market is doing better.

VALENCIAS—	Avge.
Glendora Heights, Xc. ACG. CHS.	$2.00
Alhambra, ST. Ex.	2.45
Trail, ACG. Lamanda P.	2.55
Stag, ACG. Azusa	2.60
Hunter, ACG. Azusa	1.45
Don Quixote, ST. Ex.	1.70
Pinnacle, OK., Upland	2.65
Orchard, National O.	2.95
Standard, National O.	2.25
Sappho, Amer. F. Dis.	1.90
LEMONS—	
Las Fuentes, CS. Summerland	3.45
Montecito	3.15
GRAPEFRUIT—HALVES—	
Orchard seedless	1.45

PHILADELPHIA, Tuesday, Sept. 8.—Six cars sold. Warm, cloudy.

VALENCIAS—	
Golden Orange, RH. Redlands	$1.75
Pointer, ACG., Azusa	2.30
Reliable, T. La Habra	2.35
Pinnacle, OK., Upland	2.65
Aurora, Amer. F. Dis.	2.80
LEMONS—	
Excellent, SP., Santa Paula	2.80
Sunside, SP., Santa Paula	2.05

CHICAGO, Sept. 8.—Lemons slow, they are plentiful and easy. Boxes, California fancy, $6.00; extra choice, $5.50.

ORANGES—Quoted as steady. The supply is ample for the demand. Boxes, Valencias, depending on size, $2.50@3.00.

REPORTS OF EXCHANGE

(Continued from Page 245.)

ting a sufficient number of people to use oranges and lemons, and this can most thoroughly and economically be accomplished by giving the public the reasons why they should use them, and suggesting to them the various ways in which they can be served. Advertising is not a mysterious thing. It is simply telling the people the truth about the thing we have to sell and telling them through those channels in which they have confidence and to which they are accustomed to look for information and guidance.

Support of University Department of Agriculture.

The growers must give their loyal support to the state university and to the United States department of agriculture in their investigations of the difficulties which beset the production and handling of the crop. The progress of the industry in solving these problems will be proportional to the support which these institutions receive. No wiser appropriation of public funds is made than that which relates to the upbuilding of the agricultural resources of a staate.

Cooperation of Members.

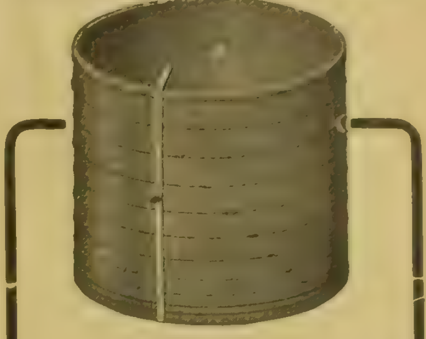
The California Fruit Growers Exchange is vital to the permanent stability of the 200 million dollars invested in the citrus industry. It is the one predominating factor, formed and managed by the growers at the cost of operation for their own benefit, that has solved the most important fruit-marketing problems for the industry in the past. It has developed an international distributing and marketing system and an international advertising campaign that looks to the future with a view to assuring the permanence of the growers' investment. Only when the growers stand shoulder to shoulder in meeting their problems systematically can they be worked out successfully.

STATE FAIR

Mr. McClanahan of the Pioneer Incubator Company informs us that he is planning for a striking exhibit of Pioneers and poultry supplies, to be made at the coming state fair. There will be demonstrations in charge of Mr. James D. Yates, who is to be poultry judge at the Modesto show.

BEAUTIFUL IRIS CATALOG

The Dean Iris Gardens at Moneta is issuing a new catalog, one of the very finest ever and exclusively iris. The Dean people have a wonderful collection of iris and the catalog is fully worthy of it.



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Simplicity, reliability, low operating cost—those are the vital points to be considered when buying an engine, and that's why the **Western** has gained such widespread popularity. On the up-to-date farm, in the shop, at the mines, in the oil field—in fact, wherever a dependable engine is needed you will invariably find the **Western.**

For ease of operation, smooth running, fuel saving, power, absence of trouble, etc., the Western is without an equal. Types and sizes from 4 to 180 h. p.

You should have our illustrated Catalog. It gives complete details.

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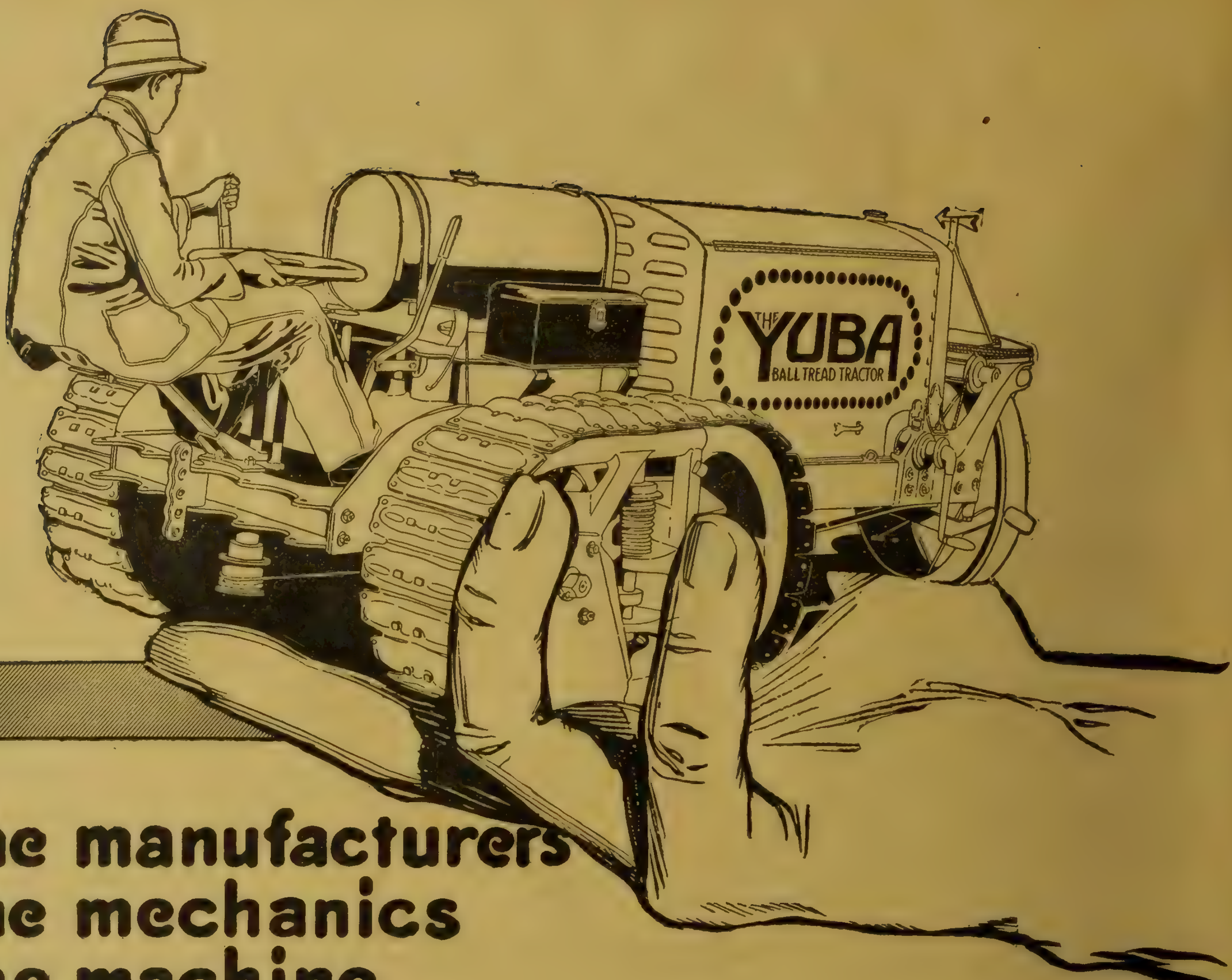


**the manufacturers
the mechanics
the machine**

Yuba Ball Tread Tractors are built by the Yuba Construction Company in their plant at Marysville, California.

Back of this concern is ten years' experience gained in building gold dredges, suction dredges and irrigating pumps.

To mining engineers, Yuba Gold Dredges are the standard.

**THE YUBA
BALL TREAD TRACTOR**

The average earning capacity of the largest gold dredge is one thousand dollars a day. A delay caused by faulty construction or broken parts is expensive.

The same engineering skill and the same mechanical accuracy that reduces possible delays from such causes to a minimum in Yuba Gold Dredges are exercised in building Yuba Ball Tread Tractors.

As for the machine—there is a booklet describing it.

THE YUBA CONSTRUCTION CO.
433 California Street, San Francisco
Dept. D-3
Works, Marysville

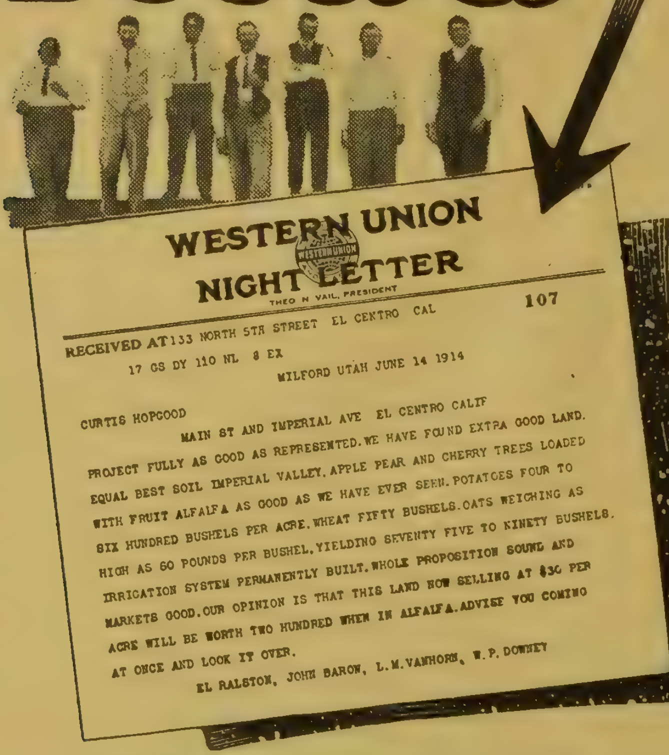
CALIFORNIA CULTIVATOR

Rural Californian combined with California Cultivator

An Illustrated Weekly Magazine, Devoted to the Rural Home and Ranch

LOS ANGELES September 17, 1914 SAN FRANCISCO

Harvest Time in the Orchard



Read-

WESTERN UNION
NIGHT LETTER
THEO N VAIL, PRESIDENT
107
RECEIVED AT 133 NORTH 5TH STREET EL CENTRO CAL
17 GS DY 110 NL 8 EX
MILFORD UTAH JUNE 14 1914

CURTIS HOPGOOD
MAIN ST AND IMPERIAL AVE EL CENTRO CALIF
PROJECT FULLY AS GOOD AS REPRESENTED. WE HAVE FOUND EXTRA GOOD LAND. EQUAL BEST SOIL IMPERIAL VALLEY. APPLE PEAR AND CHERRY TREES LOADED WITH FRUIT ALFALFA AS GOOD AS WE HAVE EVER SEEN. POTATOES FOUR TO SIX HUNDRED BUSHELS PER ACRE. WHEAT FIFTY BUSHELS. OATS WEIGHING AS HIGH AS 60 POUNDS PER BUSHEL, YIELDING SEVENTY FIVE TO NINETY BUSHELS. IRRIGATION SYSTEM PERMANENTLY BUILT. WHOLE PROPOSITION SOUND AND MARKETS GOOD. OUR OPINION IS THAT THIS LAND NOW SELLING AT $30 PER ACRE WILL BE WORTH TWO HUNDRED WHEN IN ALFALFA. ADVISE YOU COMING AT ONCE AND LOOK IT OVER.
EL RALSTON, JOHN BARON, L. M. VANHORN, W. P. DOWNEY

-what successful Imperial Valley ranchers say about

Milford Valley Lands

at $30 per acre

A FEW days ago a group of Imperial Valley ranchers pictured above visited the lands of the newly opened Milford Valley irrigation project. They are men who took advantage of the opportunities that existed in Imperial Valley several years ago. **They made money.** A few weeks ago they heard about Milford Valley of Southern Utah. They went up and made a thorough investigation, as only **practical men** can do. The Western Union Night Letter reproduced above was sent by them to Curtis Hopgood, an Imperial Valley rancher, who was unable to make a trip to the valley, but requested them to wire him immediately if conditions were absolutely as represented.

On Main Line of Salt Lake Railroad — adjoining Live Town of Milford.

These men bought generously of the rich, red, loamy lands of beautiful Milford Valley. They knew that this $30 land (with a perpetual water right at $70 per share, payable in 12 years, if desired) would be easily worth $250 or more an acre when in alfalfa. They appreciated the value of a water maintenance cost that should not exceed 30 cents per acre per annum. They reveled in the glorious mountain air of the valley —elevation 4971 feet. They enthused over the **pure, soft,** sparkling drinking water. They realized that this was a **successful man's land.** They knew that land sold on a cash basis would eliminate the homesteader class of settlers. They bought within sight of Milford, a progressive city—an important railroad center. They were alive to the crop possibilities—in alfalfa, potatoes, grain, dairying, hog raising and deciduous fruit culture. They saw another **Imperial Valley opportunity** in Southern Utah. That they bought land right on the spot is a wonderful tribute, a splendid testimonial to Milford. **Imperial Valley men surely know good land!**

This land opportunity is going fast. If you buy now you gain an overwhelming advantage over the late comers—by buying suburban to the city of Milford. Write today for illustrated booklet which tells about the best valley in the west—about land that is being sold at only a fraction of its real value. Write today!

WESTERN SECURITIES COMPANY
710-712 Hollingsworth Bldg.
Sixth and Hill Streets
Los Angeles, California
711 Watts Bldg., San Diego

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With Orders Amounting to $75.00

We want everyone to have one of our **Building Material Catalogs.** We are going to give 750 sq. ft. of 2-inch Mesh Poultry Wire with every $75.00 order. **Send Coupon below FOR ONE OF OUR BUILDING MATERIAL CATALOGS.** Look over the bargains offered at a saving of 25 per cent to 40 per cent. Send us your order for any article or articles listed. If your order amounts to $75.00 we will immediately ship the fencing **Absolutely Free.** If your order does not amount to $75.00 save your receipts until you have purchased this amount from us, and with the last order we will ship the Fencing, **Absolutely Free.** Your order need not amount to $75.00 in a specified time to receive this **Free Fencing.** It is only necessary that you make your first purchase with us by January 1st, 1916. **CAN YOU APPRECIATE WHAT WE ARE OFFERING YOU?**

Our prices on **HIGH GRADE BUILDING MATERIAL** are always the lowest. Our Million Dollar Stock enables us to sell under the market. Convince yourself!

Read this small list, below, carefully. It is to give you an idea of how we sell **Building Material.**

High Tank

Toilet Combinations complete to floor; special bankrupt stock....	$10.00
Low down enamel steel toilet combination, complete to floor........	$12.50
Low down vitreous china closet combination; Special........	$16.00
Special reductions on Kitchen Sinks: 20x30, No. 2; 18x36, No. 2...........	$2.75
Corrugated Galvanized Iron, special price, until further notice, all lengths from 6 to 10 feet; per 100 sq. ft........	$3.65
Roofing paper: 1 ply sanded.............	$1.00
2 ply sanded.................	$2.75

Samples sent on request.

Wall Board: 650 pounds to the thousand. No. 2, regular price $25, cut to per thousand sq. ft........	$19.00
Standard line House Paint, guaranteed. All colors, per gallon..............	$1.50
Shingle stain, all colors and black.........	$0.50
Graphite Roof Paint, per gallon..............	$1.00
Interior Oil Stains, per gallon...............	$1.00

Everything else in the paint line at proportionate prices. We carry everything in **Building Material.** Our stock is complete.

THE WAY TO OBTAIN FREE FENCING

Lumber

We positively have the best offerings in Lumber, both in rough and finish, in Southern California. You lose if you do not write us for estimates.

Always the Lowest on Sash and Doors

We carry everything in this department. Two light, double hung windows, 1⅜ inches thick. Best Quality American window glass, all sizes.....	60c up
No. 1 Colonial Door, selected kiln dried Oregon Pine, this is a special value, all stock sizes.......	$1.50 up

Second Hand Building Material Carried Only by Whiting Wrecking Co.

Two-inch dimension Lumber up to 2x12, up to 20 feet long, per M............	$12.00
Other sizes at similar prices. Write for estimates.	
Two-in. tongue and groove, 8x10 in. wide, Oregon Pine, per M............	$12.00
⅝x4 Maple Flooring, fine condition; special per M...........	$40.00
950-gallon Cylindric Tank; new condition, worth $35.00.............	$18.00
Roofing Paper Remnants, from 90 to 125 feet to the roll; per roll.............	$1.00
Nurserymen!!! Here is a chance to buy old lath at 100 per cent discount; per M.....	$1.75
5000 feet of quarter-inch Black Gas Pipe. Good as new, per foot.................	$0.03

Everything in Second-hand Lumber.

Be sure to write all correspondence for second-hand building material to

Whiting Wrecking Co.
9th & San Pedro Sts.
Los Angeles, Cal.

Please Send FREE Your Catalogue Including FREE OFFER Name .... CULT
City ....

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California Cultivator

Rural Californian combined with California Cultivator

Vol. XLIII No. 12 LOS ANGELES: THURSDAY, SEPTEMBER 17, 1914 One Dollar Yearly

Sixty-First California State Fair

Live Stock Display Greatest Ever Made in California. Many Other Departments Hardly Up to Former Years. Attendance Rather Lighter than Last Year.

CORRESPONDENCE BY THE EDITOR

The live stock industry, especially the dairying end of it, is surely coming to its own in California. There is a great display of beef and dairy arrivals, as there is of swine, now on at the sixty-first California state fair. Sheep and goats, about the same as former years. The horse exhibit, especially the drafters, is magnificent. But this is enough for me to say of the animal classes, for State Representative J. H. Lettow of the Cultivator staff will give them more particular attention both this week and next. This week neither of us will do more than refer to the general features, for the fair is just getting under full swing as we write.

The attendance the first two days has been rather light, though the side attractions are about as heretofore. The head-on collision of two old locomotives is scheduled for Wednesday. Thousands will attend then. The usual cowboy aggregation is tying, roping, lassoing, riding and wrestling with "wild" steers. Then there are many other attractions—some really good — especially the band music. Sunday was given over to band contests.

On the pike, where sideshows and pay attractions are staged, are a few features which are not highly educational, or rather may be educational in the wrong direction. Granted that the concessionaires are there to amuse and get the money, yet in a great institution supported by taxpayers' money and in the main supported because of educational value to agriculturists and where whole families are urged to attend, it is not wise to undo in one line the good which the fair is supposed to do in another.

For instance, there are several booths where Teddy bears, tango dolls and other fuzzy things dear to children are displayed by the thousands, raffled to children and others at so much per chance. I believe the courts have held that this method of securing or not securing merchandise is legal, while if the stakes are coin it would be gambling and prevented under the law. It's a wise head which can make the fine distinction. The question arises, "Do the children make the distinction or are they getting a little education not strictly primary?" This feature, like that of the diving girls, regarding which severe criticism has been given, might have been omitted and I believe with advantage.

But I must hasten and give particulars nevt week. I promise not to moralize more this week.

Machinery hall is not filled as heretofore, neither is the traction engine and implement field. But there is fine work being done. A monster "combined" with a 30-foot cut, holds a crowd, and when the big traction engine climbs the 45-degree incline people stand back at a respectful distance.

The race track is not so big a feature as years ago, though there are some fast ones here and the few races pulled off attract crowds.

There are about 600 entries in the poultry class. Judge Hines says these make an excellent showing—far better than last year as to quality. Pigeons, judged by R. V. Moore, are fine, as are the quail and other exhibits of the state game and fish commission.

One distinct shock is felt on entering the automobile pavilion. It is not half filled. A few remarkably fine exhibits are made, however.

Yes, the fair has many fine features, but listen to a word about live stock.—C. B. M.

* * *

By J. H. Lettow

Of course you want to know something about the stock department of the state fair this year, and the writer, having gone over the field as thoroughly as possible within the limited time alloted him, will endeavor to give, as near as he can, the status of the stock contest now being held on the fair grounds. It is with pleasure that he notes the progress being made in this field, and especially along the lines that will bring the most money to the farmers and ranchers of the state. True enough, we have state fairs galore, but when we have the quality of the stock presented such as is seen here this year, it is virtually an education in itself, not only to the old-timer in business, but to many who are but recently branching out in a new field. We have a great future before us as stock men, and as the field is practically unlimited at the present time the writer is going to draw a little comparison between this fair and its stock exhibit and those of eastern states.

First, he will mention the interest being shown in these departments by those in daily attendance and the enthusiasm manifested by the on-lookers, for many go into rhapsodies over the fine quality of the stock presented. We find, as we go through the barns and around the pens, a degree of quality which would be the envy of many a prominent eastern stock breeder. Here we note the animal whose sire stands at the head of the world's champions, there a dam whose ancestry shows the highest of breeding, and ofttimes one which may have been brought from the east after extensive winnings there. Two prominent eastern stock men, now visiting

(Continued on Page 280)

Different Varieties of Walnuts for California

Address of Dr. W. W. Fitzgerald Before Recent State Fruit Growers Convention at Davis.

This subject is about as difficult as the present status of the different makes of automobiles. Whatever make of machine a man drives he is apt to think the best. So with the man who grows a particular variety of walnut; he is apt to think that variety is the best.

In speaking of the present status of the different varieties of walnuts we have to consider soil, climate, and moisture conditions. It is true that we can regulate moisture conditions, but soils and climate we cannot change; so in considering the different varieties we must keep in mind where they are to be grown and the character of the soil they are to be grown on, as some of our best varieties that do well on heavy soil and plenty of moisture will not prove satisfactory on lighter soil and poor moisture conditions. Likewise some varieties that produce good white meated nuts in a cooler climate will produce inferior nuts in a very hot climate.

Production.

The first thing to be considered in judging the different varieties of walnuts is their producing quality. I do not mean by this to consider a large producer of an inferior nut, but a heavy bearer of a good quality nut. A tree that produces only a few fancy nuts is not to be considered commercially. A fancy variety may bring a few cents per pound more and may make up what it would lack in the number of pounds it would produce providing it was not too shy a bearer. A fancy variety producing only from 50 to 75 pounds on full bearing trees at 25 cents per pound would not compare favorably with a variety which produces 200 to 300 pounds at 12 to 15 cents per pound. The relation between the quality of nuts and the quantity of nuts produced should be carefully considered in choosing a variety for planting, especially as the demand is increasing for fancy stock.

One should not judge a variety by the fine appearance of a picked sample of nuts without considering the quantity in which they are produced. The best variety is one that will produce annually a large crop of the most desirable type of nuts. Unfortunately we do not have all the good qualities in any one variety or we would not be discussing this subject. We have to choose a heavy producer with a good quality of nut. One important point is that young trees often produce larger nuts than they do after the tree becomes older, so one should judge nuts from a tree that has been bearing for a few years.

We should also consider the age at which the tree comes into bearing, as great differences exist in different varieties as to what age they begin bearing. Some varieties begin to produce nuts even in the nursery and give a commercial crop within three years from planting in the orchard, while other varieties are several years later in coming into bearing.

Size and Weight of Nuts.

The next important consideration is that of the size and weight of the nuts. Number one grade walnuts are those that will not pass through a one-inch square opening, while those above one and three-sixteenths inches, which are generally considered as budded nuts, bring considerably more per pound and the demand is growing for this quality of nut.

The weight of the nut is equally important since this varies widely in nuts of the same size. Some of the largest varieties are considerably lighter in weight than others in which the nuts are smaller. A desirable nut should be well filled with plump white meat without too much air space between the shell and the meat. A comparatively heavy shell is more desirable than a very light one since the nut is better protected from being mashed in handling and less susceptible to perforation disease, which is one of the most serious troubles of

(Continued on Page 270)

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PRODUCING HUMUS IN THE SACRAMENTO VALLEY

Written for the California Cultivator
By J. W. Mills.

The soils of the Sacramento Valley are as a rule richer in humus than those of the drier parts of Southern Californa, still the soils not classed as bottom lands are not rich in humus, and it is quite necessary that they should receive a liberal replenishment as often as possible when the material must be grown. Stable manure is cheap, but there is even a greater dearth of it here than in the south, considering the area that will call for it.

Excluding the Tule basin, perhaps 95 per cent of the valley lands are depleted in humus. The red, yellow and brown soils pack and get hard as bone during the summer when not cultivated and where grazed close.

Where volunteer crops are grown the native legumes consist chiefly of burr clover on adobe, sandy and loam soils, Lupinus micranthus and the natural pink clover, Trifolium ciliolatum on sandy loam. Unless we have plenty of rain in October and November, burr clover is a failure and the other plants named above do not make a satisfactory growth. When irrigation is given in the fall, a good crop is a certainty. On a gravelly clay loam none of these make a satisfactory growth even under the most satisfactory conditions.

Non-Legumes.

We have tried vetch and peas for winter growing crops but cannot get the tonnage. Alfalfa makes a magnificent growth on both sandy and clay loams and is one of our best volunteer humus makers as regards tonnage.

However, barley when handled properly will no doubt give as much if not more than any other cultivated crop. Two years ago we sowed 50 acres of young orange grove to barley in September, then furrowed it out four feet apart for spring irrigation in case it should need it. The soil was spotted, red sandy loam, red and black adobe and a hard gravelly clay soil. When the barley commenced to make stalks in March we turned on the water and soaked till the moisture met between the furrows. In April the barley was beginning to head when we started to plow. With the aid of chains we managed to get most of it under till the last week of plowing when it was in full head and even with a man's shoulder. This land had been pastured as bare as a floor for ten consecutive years and would not hold the moisture or make a good dirt mulch before we grew this crop. After plowing the barley crop we had to use disk cultivators the following summer. Even they would sometimes bunch the straw during the first few cultivations making it necessary to scatter it with a fork. It must be remembered that the crop would have made from three to four tons of cured hay per acre. The straw soon became brittle on exposure to the sun and by midsummer the disks were going axle deep through a mixture of chopped straw and soil. The barley was so thick and heavy that it was impossible for it to decay when plowed under. This experience convinced us that barley is about as good as any non-leguminous plant for making humus.

Alfalfa.

In the Corning district alfalfa is becoming the favorite crop for orchard lands. It is not thought advisable to plant it in orchards till they are three or four years old, but after that it is planted to get a thick stand, right up to the trunks of the trees. The land is corrugated with a simple home-made implement as soon as the seed is sown. The corrugations are made two feet apart and are about four inches deep. The small furrows made in this way lead the water evenly over the ground and still the land is smooth enough to permit easy and comfortable mowing and raking. Almonds, peaches, apricots and prunes take on a wonderfully healthy and vigorous growth, and the crops are abundant and of high quality. This method requires a large amount of water. The alfalfa is cut and made into hay, but commercial fertilizers are added at irrigation periods. There is a loss of one crop of hay, as irrigation is discontinued for a time before the fruit matures, just as though no alfalfa were growing. Persons who have followed this practice for several seasons are highly pleased with results. The usual spring rush of plowing and getting the land in shape for summer is confined to turning on the water, cutting, raking and hauling hay. Striking examples of this practice can be seen at the Brubaker ranch and the W. W. Shoal place at Corning, Tehama County, peaches, prunes, olives, almonds and apricots being the fruit grown.

This reminds us of the experience of Mr. Smith of Old Cucamonga in San Bernardino County. He had an orchard of Moorpark apricots which never bore enough to pay expenses, so he planted it to alfalfa in the fall, expecting to pull out the trees during the winter. The press of work prevented pulling the trees and the result was he had a satisfactory crop of Moorparks. We never knew if it just happened to be a Moorpark year, or if the trees continues to produce.

Alfalfa in Citrus Groves.

Mr. Wm. M. Bristol of East Highlands planted alfalfa in his Washington navel grove about seven years ago but we have never seen any report on results in the Cultivator or any other way, so presume it was not satisfactory.

CITRUS CULTURE IN THE ISLE OF PINES

A subscriber of the Cultivator, Mr. Clinton McQueen of McKinley, Isle of Pines, has written regarding the Cultivator being a favorite with many citrus growers of that beautiful island. Regarding citrus conditions there he touches especially upon the pomelo. He writes:

"The Isle of Pines is destined to become a famous citrus country, especially in the production of grapefruit of unsurpassed quality. It ripens earlier here than in Florida, shipments going forward by every boat at the present time, the reason being, I believe, our frostless climate. The lowest I have ever known the thermometer to go was 45 degrees."

In the Isle of Pines Appeal we also

—control Red Black Purple and other SCALE by spraying with ZENO

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note reference to citrus conditions there and that the citrus industry is becoming important enough so that there is talk of forming a citrus exchange which shall affiliate with the Florida exchange.

"The Florida Citrus Fruit exchange has made an offer to the Isle of Pines Fruit Growers exchange of the use of its immense sales organization in the marketing of Isle of Pines fruit. Such an agreement would be of inestimable benefit to the island from many standpoints and would also lengthen the Florida shipping season. Island fruit would be marketed with the seal of approval of the Florida exchange and would necessarily have to conform to the high standard of pack set by that association. The boxes would also bear the grower's individual mark or the brand of the Isle of Pines Fruit Growers exchange.

"Instead of having the Florida growers as the bitterest rivals of the Isle of Pines they would by this affiliation become our staunchest supporters and in case of annexation to the United States, the Isle of Pines would be able to assume her proper place either as a county of Florida, or as an independent territory.

"The Florida exchange has agents and salesmen in all principal markets and in case of low prices or an overloaded market in one section they are in a position to divert shipments to a more advantageous market. They also sell some fruit at the packing houses as northern buyers are continually in the south during the fruit season. Florida growers and packers have had years of experience in packing and Florida fruit sets a high standard in excellence of pack, and island growers would be protected against poor and unscrupulous packs."

FERTILIZERS AND CROPS

Fertilizers and Crops, or The Science and Practice of Plant-Feeding, by Lucius L. Van Slyke, Ph. D., Chemist, New York Agricultural Experiment Station, published by the Orrange Judd Company, New York, at $2.50, postage added.

The Cultivator will be glad to secure the book for its subscribers at the above price or, including a year's subscription to the Cultivator, at $3.35.

"During the past generation there has been intense and ever-increasing activity among agricultural investigators in the study of problems relating to plant nutrition and soil fertility, covering all the various phases, chemical and biological. Much work has been done in making practical application of the results of investigation to the use of plant-foods in the growing of crops. As an outgrowth of this activity, numerous books relating to soils, crop growing, fertilizers and kindred subjects have appeared, some treating certain limited aspects in much detail, others discussing all phases in a general way. For some time, however, there has existed marked evidence of a growing demand for a book which should not only assemble in a connected way the important facts and principles relating to soil fertility and plant nutrition, but which should follow such a preparatory foundation with a systematic, reasonably thorough study of plant-foods in relation to practical use in crop growing. In the attempt to meet such a demand, this book has been prepared. Effort has been made to keep in mind the needs not only of students in agricultural schools, but even more, of the larger class of student farmers who are directly and vitally interested in the profitable production of crops."

The above is from the preface of the book. It gives a very clear statement of the needs of the time and the effort to meet them. The book is made up of four parts, the first having to do with the factors of soil fertility, relations of plant food to soil fertility, chemistry of plants, soils and plant foods; part two, with its eight chapters, touches upon sources and composition of materials used as fertilizers; part three, with six chapters, deals with factors in the solution of fertilizing materials; part four, with a dozen chapters, touches upon the practical use of fertilizers in the growing of individual crops. The book is fresh from the press and one of the very finest on its subject.

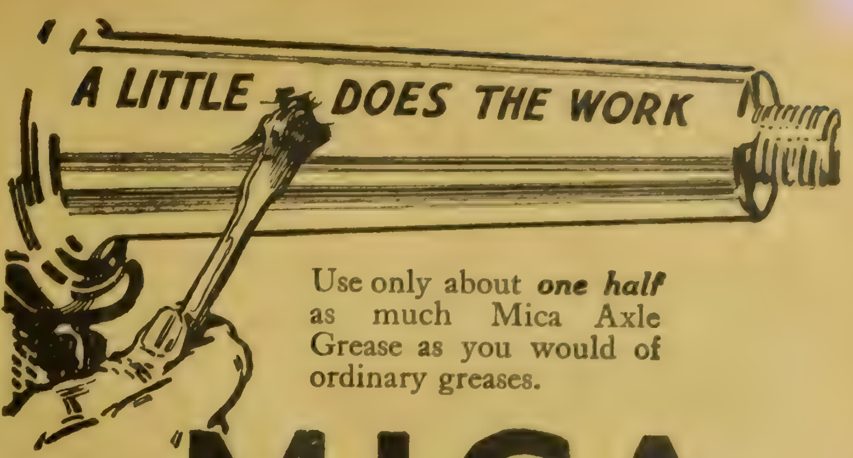
EXPERT ADVICE

By V. L. Deane, Seabrook, Texas

I notice an article in the Cultivator of August 20 from a subscriber who complains of "expert advice" on the destruction of Russian thistle, which reminds me of some sad experience I have had with "expert advice."

About a year ago I noticed a fungous disease on a young grapefruit tree in my citrus orchard. Not knowing what it was I sent some of the infected leaves to the Texas state experimental station and was informed by them that it was the "Texas orange scab" and could be easily controlled with Bordeaux mixture. I commenced spraying immediately, and now after a year of frequent sprayings my entire grove is infected. The grapefruit trees are dying, as they seem worse affected than the hardier oranges. Had I known the seriousness of this disease I would have grubbed up the first tree that was infected and burned it root and branch and could have saved the balance of my grove. Now I will probably lose my entire orchard from following "expert advice." The last time I sprayed my trees I was determined to kill or cure, so I sprayed with a pure stock solution of Bordeaux, about 10 times stronger than the standard 5-5-50 formula. Strange to say, it did not kill the trees, neither did it kill the scab, so I am positive now that Bordeaux is absolutely worthless as a remedy or preventative for the Texas scab.

I would strongly advise California to enforce a strict quarantine against Texas nursery stock, for if this disease gets established in your state it will ruin the citrus industry. Texas scab is the worst disease I know of; white fly and scale are a joke compared with scab.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Why phosphorous is necessary for plant-life to live.

Necessity of nitrogen in the soil.

How plant-life cannot utilize the elements of the air if there are not sufficient mineral elements in the soil.

How plants feed.

What humus is.

The theory of cultivation.

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What available soil fertility is.

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And 100 other points not mentioned in this list.

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DIFFERENT VARIETIES OF WALNUTS

(Continued from Page 267)

the walnut grower in recent years.

This is a non-development of the outer hard layer of the shell. The hard shell is not actually perforated, but rather fails to develop. This disease has become more prevalent in the last few years and affects principally the nuts with very thin soft shells. Nuts that are prone to crack easily and have a fine light shell are more or less injured in handling.

It is also to be considered that since walnuts are sold by the pound, the heavier the shell the greater the weight, and the more the returns for a given number of nuts. The Grenoble, strictly speaking, is a Mayette variety. It is not a long nut, somewhat broader at the base than at the apex. This is not very important, however, since the smoothness, symmetry and uniformity of the nuts affect their appearances more than does their shape. An ideal nut should be quite smooth, free from outside ridges and other irregularities of surface, and all nuts should be of the same general shape and appearance, giving them uniformity and individuality. A variety in which the nuts are decidedly uniform so that the variety is easily distinguished and recognized, even by the consumer, has a marked advantage over one in which the nuts are of all sorts of shapes so that only an expert could distinguish the variety.

The color of the shell is not so important, as the trade demands bleached nuts even though they may have an attractive appearance without bleaching. By being bleached they are all brought to about the same color. The quality of the meat is of considerable importance, however, as nuts with the lightest colored meats are considered more desirable, while those that are dark, even though plump and of good color, are discriminated against. There is no doubt but what the dark meated varieties will become less popular as more of the lighter colored ones are produced. The flavor of the meat varies considerably in the different varieties and is of much importance in a high class fancy trade. Commercially there is not much importance placed on their flavor except when they are bitter, and this is a most undesirable quality and should be guarded against in choosing a variety.

The most important qualification of a variety from a strictly commercial standpoint is that it should be a uniformly large producer of nuts, the majority of which will not pass through a one and three-sixteenths inch square mesh, well sealed even though hard shelled, and uniformly well filled with meat of light yellowish brown color or not darker than light brown or amber. For fancy trade the nut should be of an attractive uniform shape and color, with a fairly smooth surface and particularly high quality, with agreeably flavored meat and with no bitterness.

The next important consideration is the choosing of a variety that is resistant to blight. This is a bacterial disease which affects the young growth when it first puts out and requires for its development moist weather conditions. It is not very prevalent in northern and central California on account of the drier atmosphere, but under the same conditions some varieties are more blight resisting than others, probably due to their vigor. As a rule the late blooming varieties are free from blight as they come into bloom when the weather is drier and the blight can make little headway, while the earlier varieties blossom during a moist season on account of rain and fogs which are favorable periods to its development. Certain varieties are spoken of as being immune to the blight, but while there is no such thing among walnuts as absolute immunity when conditions are favorable for the development of blight, yet some trees do show quite a marked resistance and should be given precedence on this account.

While there are many seedlings of promise scattered throughout the state, both of the Santa Barbara soft shell type and the French varieties, I will only consider the prominent varieties that have been thoroughly tested.

Santa Barbara Soft Shell.

Originated by Mr. Joseph Sexton of Santa Barbara. It is a seedling grown from a sack of nuts which probably came from Chili. This is the prevailing type of seedling walnuts of Southern California. The nuts vary in size and are irregularly shaped. Trees come out early in the spring, having a growth of six to eight inches by March 20. The trees vary in their bearing qualities, are very susceptible to blight and are not very desirable for this reason and for their irregular bearing.

Santa Rosa.

A chance seedling introduced by Luther Burbank at Santa Rosa. The tree is a very thrifty grower and very precocious, but the nuts are small on old trees and susceptible to blight, consequently not very desirable.

Placentia.

The Placentia which originated in Placentia near Fullerton was extensively propagated by Mr. J. B. Neff of Anaheim. It was a seedling of the Santa Barbara soft shell type. The nut is of medium size, averaging one and one-fourth by one and one-half inches, runs largely to average size; has very few large or small nuts; form is regular and somewhat elongated; the surface is quite smooth and the ridges not very prominent; the nuts are uniform in size, but vary considerably in shape and smoothness, some quite elongated, others nearly round, but the shell is thin and strong. The nuts are poorly sealed. The septum is almost free from the shell so that the nut can be easily opened with the fingers and the whole meat taken out intact. Kernel full size, quite smooth with comparatively few convolutions, averages 50 per cent or more of the total weight of the nut. Flavor mild and pleasant with no pronounced character. The tree makes a vigorous growth and the foliage is very abundant and thrifty. The foliation period is quite early, about the same as all Santa Barbara seedlings, having a growth of about six inches by the 8th of April. It comes into bearing early and is a heavy bearer and the harvest season is early. It is very susceptible to blight and the nuts are sometimes badly perforated. This is the best type of nut in Southern California.

Ware's Prolific.

This variety also originated from a Santa Barbara soft shell seedling at Garden Grove. This is rather a large nut even on old trees. It is oval, quite elongated, base and apex equal breadth, pointed at both ends. It is quite smooth and has conspicious longitudinal grooves which give it a characteristic apperance. The nuts are very uniform, but poorly sealed, meat is decidedly plump and well filled, averaging about 50 per cent. Flavor is mild and pleasant, but the meat is quite dark, ranging from amber to dark brown, and in many cases nearly black. The tree comes out early in the spring, make a fairly vigorous growth forming much fruit wood, which makes the tree low and spreading. It is well filled with fruit spurs and the foliage is abundant and thrifty. The harvest season is early. It is one of the most precocious varieties we have, coming into bearing when very young. It is subject to blight the same as the other soft shell seedlings and very prone to perforations. This nut is worthy of consideration on account of its heavy and early bearing, as a tree for interplanting for a few years.

Chase.

This originated in a tree near Whittier and has been widely propagated by Mr. Rideout of Whittier. This original Chase nut is medium to large size on young trees, but small on older trees. It is broadly oval or rounded; apex and base of equal breadth, apex terminating in a short and pronounced point. Surface is quite smooth, nuts not so very uniform. They are badly sealed and perforate on young trees. The meat is plump and well filled, averaging nearly 50 per cent of the total weight. Flavor is mild. This tree comes out earlier than the average Santa Barbara seedling. The growth is very vigorous and thrifty and the foliage abundant. The nuts are harvested early and the tree is a very heavy bearer, but is subject to blight. It is a good type of the Santa Barbara soft shells except that the nuts are small.

El Monte.

A Santa Barbara soft shell seedling which originated near El Monte. It is a somewhat irregularly shaped nut with pronounced ridges. The nuts are well sealed and filled with light colored meat. Comes into bearing early and bears quite heavily. The tree is a thrifty grower, comes out early in the spring about the same time as the other Santa Barbara seedlings and is harveted early. Its blight resistance is about the same as the other Santa Barbara seedlings. It is desirable on account of bearing early and heavily, but the nut is quite homely.

Neff's Prolific.

The original tree is a Santa Barbara soft shell seedling in Mr. J. B. Neff's orchard at Anaheim. Mr. Neff selected this tree on account of its heavy bearing and not being so subject to blight and perforation as the ordinary seedlings. The nut is of good size, well sealed, exceptionally heavy and well filled with light colored meat of good flavor. This variety has not been propagated very extensively and is a good variety on account of its heavy bearing, although the nuts are homely, being rough and irregularly shaped.

Franquette.

The French variety has several types. The one most commonly known as the Vrooman from the Vrooman grove at Santa Rosa was first propagated by John Rock at Niles. The Leibs of San Jose are also large growers of the Franquette. The Oregon Nursery company controlled the scions and nuts from the Vrooman grove for a number of years. This variety, being well advertised and highly recommended, has been extensively planted on the Pacific Coast of recent years, not only as grafted trees, but as seedlings. Since there were not enough grafted trees to supply the demand many resorted to planting seedlings. The eagerness of planters to set out walnuts caused Franquette seedlings to be planted. Of course the result of this, as with all other seedlings, is going to be variable and disappointing.

The Vrooman Franquette nut is medium to large and retains its size on old trees. Decidedly elongated, pointed base, much broader than the apex, surface medium smooth with sutural ridges. The color is a light yellowish brown. Their uniformity is strong and their characteristic shape makes them easy to identify. The nuts are well sealed, but thin shelled and are readily cracked. The meat is moderately plump and the shell well filled except at the point of the nut. Flavor is sweet with a characteristic nutty flavor. The consistency of the meat is also soft or oily. The buds just begin to swell about April 15. The harvest season is late, often being caught by the fall rains. It is a fairly vigorous grower. The precocity is not pronounced. It is one of the slowest of the varieties to come into bearing, has a thick husk and abundant foliage which protect the nuts from sunburn. It is one of the best proven varieties for central and northern California and has been considerably tested. The quality of the nut is the best. With its uniform shape, pretty color, white meat and firm seedlings, the Franquette is of the very highest quality and were it a heavy bearer it would be an ideal nut.

Mayette

This, like the Franquette, is a French nut. Like the Franquette, there are several types of Mayette, due probably to being originally propagated in France by seedlings. They differ widely in character but have a general resemblance. The Mayette, like the Franquette, is characterized by the shape of the nut. In the true Mayette type the base of the nut is decidedly flat and square, cut so that it can be set on the base without falling over. The nut rounds broadly to a point at the other end, giving it a sort of a flatiron shape. In a good Mayette the meat is plump, white, well developed and of a good flavor. It averages about 50 per cent of the total weight. The shell is thin and strong and well sealed. The Mayette comes out late in the spring, about a week or 10 days before the Franquette, but ripens at least three or four weeks earlier in the fall than the Franquette. The different types vary considerably in rapidity of growth and amount of foliage, also in their bearing qualities, most of them being light producers. Mr. S. F. Leib of San Jose has some imported trees, and there are several types that were imported by the late Mr. Gillet. Trible brothers of Elk Grove also propagate two or more types which were imported from France. Mr. Leonard Coates of Morgan Hill has propagated quite extensively the San Jose Mayette, which is one of the most attractive and handsome walnuts grown in California. It is of large size, above the average of most varieties, has a typical Mayette form with smooth surface and uniformity. The nuts are not any too well sealed, have a thin shell and the meat is small in proportion to the shell. This type is of slow growth and scant foliage and not a heavy producer. I have a Mayette imported from France, which is most promising, as the nut is a good type, precocious and a heavy bearer. If it continues its present standard it will be a leader.

Bijou

This is also a French variety, having the characteristics of those varieties, that is, coming out late in the spring. As a rule they are very rough and poorly filled with meat and are not considered a commercial nut. There are, however, Bijou seedlings, which have a smoother and better nut such as the Acme, which is fairly smooth, rather elongated at the apex than at the base and almost square in end view. The shell is heavy and it is fairly well filled with meat, averaging about 40 per cent of the total weight. It is not of any special value for commercial purposes.

The Klondyke is another walnut of the Bijou type. The Willson Wonder, propagated by F. C. Willson of Sunnyvale, is perhaps the best Bijou type we have. The nuts are very large, but smoother and better filled than those of the Bijou. It is extremely precocious, coming into bearing early. The nut is smooth and symmetrical, being broader at the apex than at the base and nearly square in end view. The flavor is mild and sweet and the meat white. These nuts are very large. They sometimes measure two by three inches. The tree is a slow grower and of scant foliage, probably due to its heavy bearing qualities. It is like the other late varieties, quite blight resisting in dry climates. The trade claims this variety is too large for a commercial nut, being more of a novelty.

Payne

This nut is an accidental seedling discovered by George C. Payne of Campbell. It is of the Franquette type and is an excellent nut. It comes out rather early in the spring and is a heavy bearer, but blights badly.

Parisienne

This is a French variety, introduced by the late Felix Gillet. The nut is rather long and pointed, somewhat resembling the Franquette, but broader in the center. The shell is light, the meat is fairly well filled, light color and a good flavor. Like the other French varieties, it is late in coming out in the spring. This is a very good nut, its greatest drawback being that it is a light producer.

Concord

This variety originated in a seedling tree on Mr. George M. Westcott's place at Concord, Contra Costa County, the original tree coming from Felix Gillet. It has been propagated by Leonard Coates of Morgan Hill. Its nuts are not large; they are broad and short with a square cut base, slightly wider than the apex and fairly smooth. The nuts are fairly uniform and are well sealed. The meat is plump, white and well formed, filling the shell completely. The tree comes out medium late, midway between the Placentia and the Franquette. The growth is thrifty, although the tree ultimately does not become very large. The nuts are harvested early in the fall. It is a good bearer and comes into bearing early. Like all late varieties it is fairly immune to blight. This variety seems well adapted to hot sunny regions and light dry soil. It is a very good variety, although the nuts are small.

Eureka

This variety originated in a seedling tree at Fullerton from nuts obtained from the Meek place, near Haywards, California. The desirable

(Continued on Page 287)

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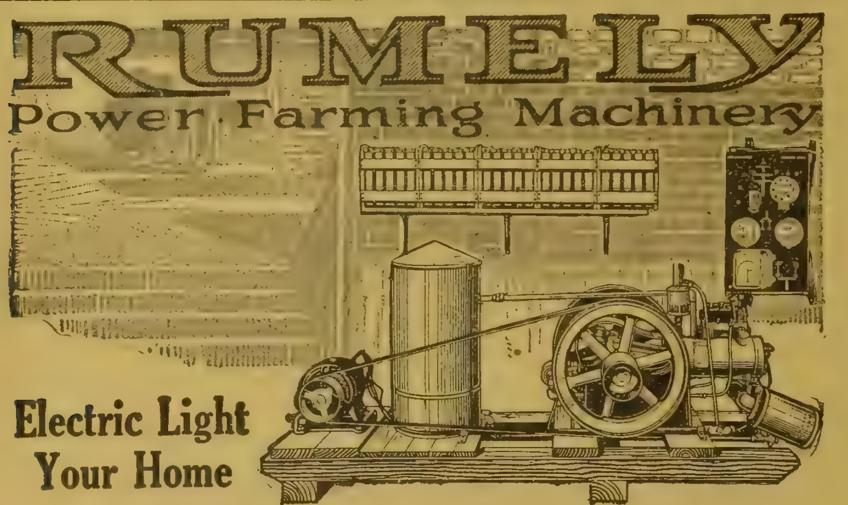

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The Ornamental Garden

RURAL NEEDS

Written for the California Cultivator
By Ernest Braunton.

Every rural community is daily confronted with some serious drawback that is hardly ever existent in the city, yet there are needs common to both in which the country could easily excel the city. One of these, quickly and cheaply solved, lies in the provision of roadside trees and other highway embellishment.

It has often occurred to me that the initiation, even the maintenance of this work, might be left to the schools, with a strong probability of signal profit to both schools and the community in general. One most crying need in some localities is a better country school, and how may attention be called to such need more strikingly than by showing a high appreciation of the various needs of the neighborhood and a strongly expressed desire to stand in the vanguard of the improvement forces?

In one of the counties of Oregon the several schools are each to build and maintain a stretch of good roads, to demonstrate the value thereof, so that the people will demand that the whole county road system be kept up to the standard set by the schools. But how much more easily and more cheaply could highway embellishment be carried on, for, as a rule, rural highways in California are already on a high plane of improvement and maintenance.

Better methods of marketing farm products is now one of the greatest needs, but school children cannot grapple with such problems any more than they could with the one of providing a better system of agricultural finance, but roadside planting is closely akin to home grounds improvement, and either one actively pursued should encourage the other. The influence of the school on the home is unmistakable. It has clearly been proven that better sanitary methods on the farm have been brought about largely because the constituted authorities have forced similar methods on rural schools. Now is the proper season to begin all civic improvement work, more especially if it is to be prosecuted through or by the aid of school children, for the autumn term of school is about to begin, the weather is cooling and all will feel more active than during the heated period Californians still call summer. Schools may easily, and without direct outlay, secure experts who will advise them as to proper methods of highway planting, the best trees to use. Experienced planters, growers, pruners, etc., could from time to time supplement the work of the teachers in giving practical talks or demonstrations "on the firing line" of how best to persue the work in detail. This movement should be taken up as an entirety by the county officials, so as to be uniform throughout and bear the stamp of governmental approval. Such a movement would prove a powerful uplift in rural improvement.

Moving Plants.

The present is a splendid time for transplanting trees and large plants of nearly all classes. It is now that the nurseryman digs palms, etc., for winter trade. Usually these are boxed, but often are sacked only and "heeled in" in sand or sawdust to await the later market demand. While all other palms should have a ball of soil taken with the plant, all species of Washingtonia are as easily established without soil. It is of far greater importance to see that the trunk is carefully handled so that no fibers are broken, or, like a "strained" watermelon, decay may easily be induced and the palm die by reason of destruction of the life-carrying ducts in the trunk through breakage. This often occurs through allowing a tall palm to fall heavily to the ground. Nearly all the leaves should be cut away and the remaining central shaft of leaves tied up to prevent drying out too rapidly, as they would do if allowed to droop singly.

When the roots are cut below the pumping of water into the trunk is stopped and the trunk begins to shrink, continuing to do so until the roots again start action. Therefore water every day near the top of the trunk so that all the "pockets" may be filled and the trunk surrounded by a jacket of moisture from which it may freely absorb. This will prove a great aid in re-establishment of the vital functions of the plant. Do not, however, water too much in the center of the green top or excess of water during the period of dormancy may induce decay. If this center rots so the leaf spike comes away, the palm will surely die. This seldom occurs in the case of Washingtonias as they are hardy subjects, but it is a common cause of death in the cocos and other fine and tender palms.

Formal Citrus Trees.

If one wishes formal trees in the garden why use bays imported from Europe and which serve no purpose but as ornaments, and even then are of far less value than many other plants readily available? Sentiment alone is responsible for the use of bays, for they have for many centuries been clipped into formal shapes.

In my opinion some of the privets have them "beaten to a frazzle," especially the species handled in local plant depots as Ligustrum Nepalense. And again, what's the matter with some of the citrus family? For smaller plants use the Kumquat and no bay ever grown could surpass in beauty the willow-leaved Mandarin. Even the Dancy Tangerine and others of the same class could be utilized for larger subjects. In many parks of Europe, notably in Paris, one may see aged citrus trees in giant boxes, where tree tops have been formally pruned for long years. When the golden crop of fruit hangs thickly upon clipped citrus trees bearing both leaves and fruits of small size, the effect is much more charming than that of any bay ever grown. At least one firm of growers in Los Angeles has given citrus trees a trial as herein outlined and the free use of them in the future will, I am sure, displace many bay trees.

Use Native Annuals.

There are many places on the average farm where may be grown a good collection of native California wild flowers, spots otherwise neglected and too often given up to weeds. Last winter I sowed a spot in my own garden to a mixture of 20 kinds of native flowers, put up in trade packets by a Los Angeles seedsman. It was a tiny plot, 10x20 only, yet it proved a great source of pleasure to every member of the family and was admired by many visitors who will sow a similar plat at the beginning of our rainy season. Try it once and be convinced of the ease of attaining a rich garden of flowers at little cost and no subsequent care or trouble.

Propagate Herbaceous Plants

Get a box of sand; now. Try out the propagation of all the herbaceous plants in the garden of which you desire a larger stock. This is the best time of all the year for the increase of nearly all this class of plants. You will be agreeably surprised with the results of the experiment and your flower garden will rapidly assume a finer appearance and gain a deeper hold on the affections of every member of the household. Do not have your sand-box water tight, for the sand must have drainage, and do not stand the box where the soil upon which it sets will prevent such drainage, a very common mistake.

Burn or Bury Litter.

Clean up all garden litter and either burn or bury it so as to have no harbor for insect and other pests; also to destroy weed seeds, and further, to provide more organic matter in the soil. Too little attention is paid to this phase of gardening and the result is poor starved soils often covered with weeds, and the crops ravaged by insect pests.

Save Ashes and Plaster.

Often have I seen wood ashes and old plaster dumped in holes or waste places on the farm while potash and lime were being purchased by the farmer for both ranch and garden. All this is wrong. While old plaster is excellent for all soils it is doubly valuable on heavy sticky ground. Wood ashes are valuable in lime and potash content for any and all soils and for nearly all crops of plants.

Why Century Plants?

While I would not discourage the use of ornamental plants on the farm, nor inveigh against a collection of prickly plants, I have seen many neglected specimens of century plants and other bearers of spines and prickles that no one seemed to care for. The places of these might very profitably be taken by artichokes, one of the finest delicacies of the garden, a plant of considerable ornamental value that will fit in with almost any garden scheme. One thing must, however, be observed. Artichokes need an abundance of water if good buds are to be picked.

WEEDS IN WALKS

Rock salt or blue vitriol is a cheap and effective agent for destroying weeds in walks, garden paths, etc. The best method of procedure is to boil the salt or blue vitriol in water, one pound to the gallon and apply the solution boiling hot, with a watering pot that has a spreading nozzle This will keep the weeds and worms away for two or three years. Put one pound to the square yard at first and afterwards a weaker solution may be applied when required. Gas liquor is another cheap medium, but has an offensive odor and may injure the roots of trees if carelessly used.—Henry A. Doerner, Colorado Agricultural College.

TO THE CITRUS FRUIT GROWER

Who wants to raise MORE FRUIT and BETTER FRUIT

PRACTICAL EXPERIENCE over many years has DEMONSTRATED to the satisfaction of all keen observers of causes and effects, that SCALE CONTROL is BEST OBTAINED by FUMIGATION with HYDROCYANIC ACID GAS.

CORRECTLY FUMIGATED TREES

PRODUCE

MORE FRUIT AND BETTER FRUIT

CORRECT FUMIGATION may be had only through RIGHT METHODS. The GROWER when fumigating SHOULD KNOW .

THAT **chemicals** of **known strength** and **quality** are used, and in **proper quantity, rightly proportioned** to secure correct gas delivery from the generator for safe, efficient fumigation.

THAT **tents** are in **perfect condition** to insure against excess **gas leakage.**

THAT **correct dosage** is always applied—this is best obtained with **marked tents and careful measurements** so that reasonably correct calculations will be made of the cubic space under a tent over a tree—and that the DOSAGE is made to FIT the CUBIC SPACE to be filled with Hydrocyanic Acid Gas.

THAT **dosage charts scientifically figured** are available for field use.

THAT different scale pests, and the same species in different stages of development, require varying gas volume under tents; to at all times get highest killing efficiency this gas volume is controlled by the cyanide dosage and mixing formula for cyanide, acid and water.

THAT **the mixing formula** (the proportions of cyanide, acid and water) MUST be RIGHT, as too **little acid for a given** amount of cyanide **interferes** with the **chemical reaction, too much** means **waste, too little** water causes **explosive generation** and the crystallizing (freezing) of residue, **too much** water REDUCES the GAS DELIVERY, **wastes cyanide** and **impairs efficiency.**

THAT the proportions of cyanide, acid and water to secure maximum gas delivery from a given amount of cyanide have been scientifically worked out and should be carefully followed, except

THAT when operating on SMALL TREES with a cyanide dosage of 3 OUNCES and under the formula should be changed—double the amounts of acid and water.

THAT reasonable **supervisory watchfulness** while trees are being treated will insure more careful attention to details by field operators, with **better clean-up results.**

THAT inspection of fumigated trees to determine scale **killing results** should be made not earlier than **seven** and not later than **fourteen** days after being fumigated.

THAT the inspectors should be **competent, painstaking** and **thorough**—MEN **with** the CONSCIOUS KNOWLEDGE that **important responsibilities rest upon them.**

THAT damages to trees and fruit, while infrequent and small, when compared with benefits obtained, do at times occur, and in most cases **through no fault of the operator;** such damages, to a certain extent at least, should be at the **cost of the grove owner.** Reasonable treatment of the field operator, with **less demand** for **reputation** by the grower, will secure for him better scale-killing results, or, say a MAXIMUM BENEFIT at a MINIMUM COST.

THAT wind is a factor in spreading scale pests; tests made in a unique way show young scale carried as far as 600 feet (possibly farther, **but not satisfactorily proven).**

THAT the **block system** in cleaning infested districts is the only safe method to **insure** getting **full value** out of a clean-up campaign.

THAT **the** grower **by** watchful intelligent and painstaking study of conditions and correct co-operation with field operators will secure **better results** from the money expended for the **fumigation** of his citrus acreage.

THAT the PERMANENCY of the CITRUS FRUIT INDUSTRY hinges on **correct control of scale pests,** and this control is best obtained through the FUMIGATION OF THE TREES WITH HYDROCYANIC ACID GAS.

THAT many testimonials similiar to the following are in our files:

W. H. Jameson Co., Corona, Cal., says:
"In reply to your favor of the 18th we have to say that we are strong believers in fumigation with Cyanide, as we consider it the most practical way to control the scale pest that has as yet been discovered."

Mr. Hemphill, manager for C. C. Chapman, Fullerton, Cal., said:
"Correct fumigation spells clean trees, more and better fruit, highest prices in the market, and larger returns for the grower."

Mr. O. B. Griffin, assistant manager Leffingwell ranch, Whittier, Cal., said:
"The fumigation of citrus trees is a profitable investment for the citrus fruit grower, and properly done will bring large returns."

A. F. Call, Corona, Cal., said:
"Replying to your inquiry, I did not suppose any California Citrus Grower in this day and age would doubt the absolute necessity of fumigation for scale. Any man who has scale and cannot fumigate should sell out as soon as possible, for there is no place for him in the business."

Mr. W. C. Hendricks, manager, Azusa Citrus Association, Azusa, Cal., says:
"The cost of fumigating citrus trees should not be considered as a part of the expense account in the handling of a citrus grove, but rather as an investment that brings speedy and large returns on the money paid out."

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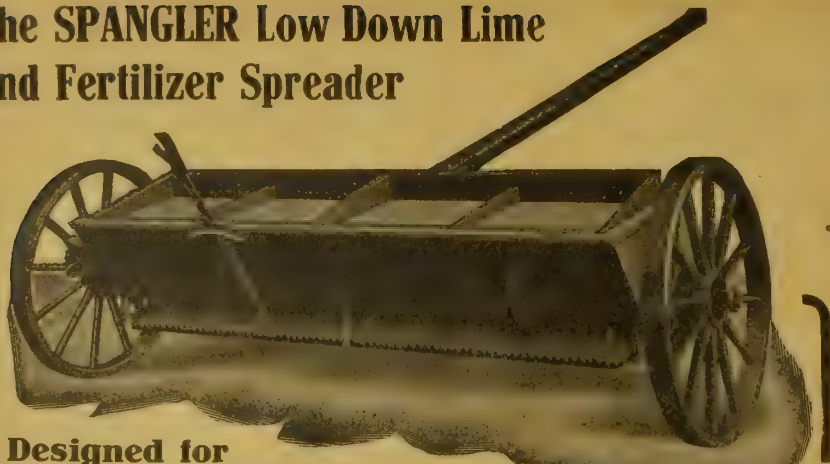

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VETCHES: We are headquarters for imported and Oregon vetch.
We cannot too strongly advocate the inoculation of seed for best results. Hundreds of our patrons testify that the use of

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has increased their crops from 200 to 300%, thus giving more humus for the soil and more nitrogen — gathered from the air by the nitrogen gathering bacteria and deposited in the soil through the nodules they form. The cost—less than $2.00 per acre. For booklet on *Farmogerm*, advice on Cover Crops and Prices, write to Dept. C

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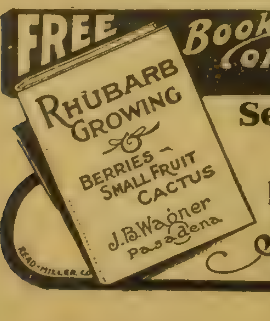

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Farm Economics

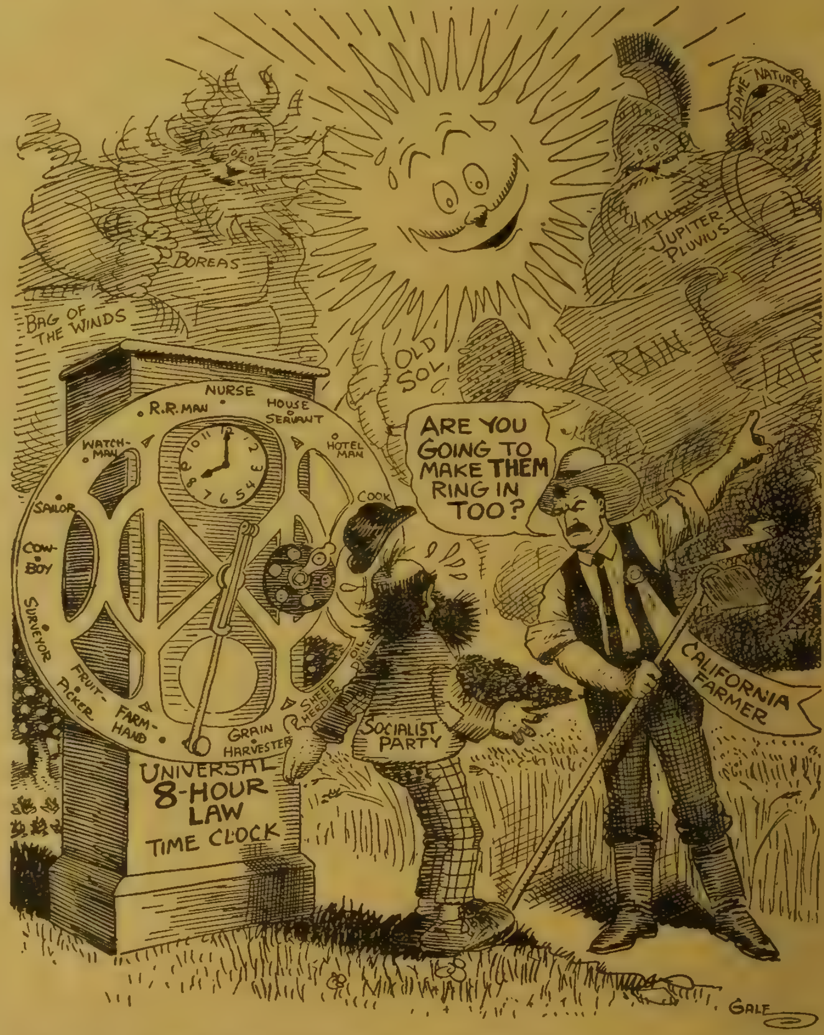
"MR. FARMER, WE'LL ABOLISH ALL PROFITS"

Objections by the farmers throughout California that the proposed "Universal Eight-Hour Law," by its sweeping and drastic terms, would be impracticable, unjust and ruinous to all agriculture, has called forth a remarkable statement from Thomas W. Williams, state secretary of the socialist party, which political organization placed the law on the ballot by petition and is now urging its adoption at the November election. In the course of a signed argument for the drastic law, he says:

"I want to break this information gently, Mr. Ranchman, that your ownership of the land is only temporary, any way. We are not agitating an eight-hour day because of its effect on your profits; we propose the abolition of all your profits. The sooner you learn this the better."

Secretary Williams also says: "We cheerfully admit that a universal eight-hour law will, to an extent, increase the cost of living." As no general raise of wages is hoped to be accomplished at the same time hours are reduced, the opponents of the law urge that the worker will suffer doubly, having his living cost increased without a greater income, and in many instances, under piece work and payment by the hour, suffer a heavy reduction of earnings.

FARMING BY A TIME-CLOCK.



OVER 80,000 PRACTICAL WHITE FARMERS OF CALIFORNIA SAY THIS LAW IS IMPRACTICABLE AND MEANS RUIN TO OUR AGRICULTURE.

Vote "No" on Universal 8-Hour Law, Proposition No. 3.

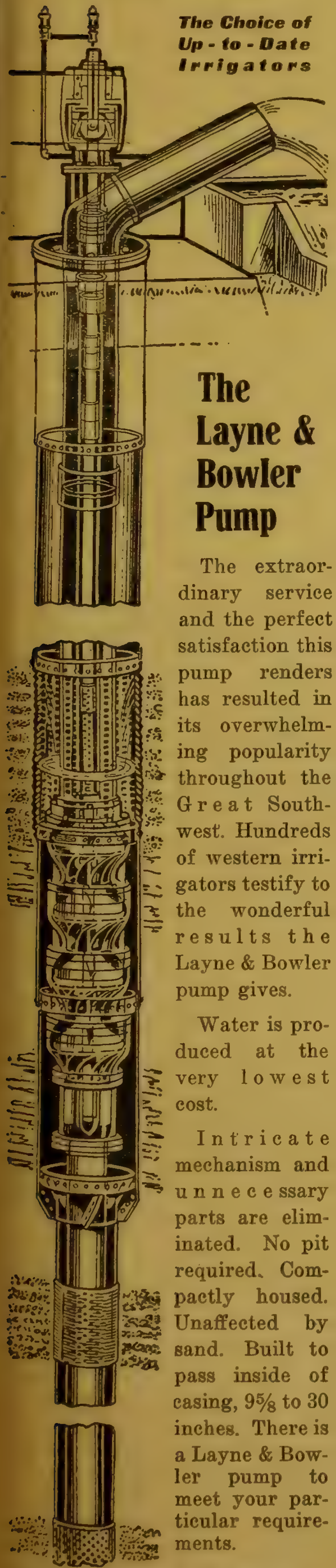
Workers Also Oppose It.

Statements by socialist party proponents of the eight-hour measure that "the small farmer in reality favors the law" has called forth a formal denial by the Farmers and Fruit Growers' Federation, which organization also declared thinking workers very generally oppose the legislative experiment. The federation statement says:

"The statements just now being promulgated by advocates of the universal eight-hour law that small farmers favor its adoption is wholly unjustified by our very extensive knowledge of conditions in agriculture. Our membership includes over 10,000 soil-workers in every part of Southern California, and we have been in closest touch with farmers of all classes in every section. Over 40,000 soil workers are enrolled in active organized opposition throughout the state. In every section all manner of soil workers, growers of fruits, vegetables, nuts, beets, beans, grain, hay, live stock, and general agriculturists, have denounced the law as impracticable, dangerous, unfair and calculated to ruin our agricultural prosperity. This organization has on file scores of signed statements by farmers, large and small, in which they explain in detail just how the inflexible, restrictive penal statute would hamper and injure their operations.

"If all profit is to be abolished, as sought by the socialist campaign manager, obviously there can be no successful farming, and there can be no employment of labor under any

The Most Popular Pump on the Market



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The extraordinary service and the perfect satisfaction this pump renders has resulted in its overwhelming popularity throughout the Great Southwest. Hundreds of western irrigators testify to the wonderful results the Layne & Bowler pump gives.

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Intricate mechanism and unnecessary parts are eliminated. No pit required. Compactly housed. Unaffected by sand. Built to pass inside of casing, 9⅝ to 30 inches. There is a Layne & Bowler pump to meet your particular requirements.

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conditions of hours or wages. Many farmers have stated that the sweeping eight-hour measure will in fact abolish all their profits and compel them to abandon their ranches, either selling outright or leasing them to Orientals who are able to escape the provisions of the law and labor without restrictions through the subterfuge of 'cooperative partnerships.'"

Labor Would Be Greatest Sufferer.

The "Sacramento Bee," a constant newspaper champion of labor, in an editorial opposing the universal eight-hour law as "premature and unwise," says:

"Theoretically and as a gift from Utopia an universal eight-hour law would be a splendid thing. So would the international reign of socialism. But in this workaday world neither is practical at the present stage. If an universal eight-hour law and socialism were in the saddle in this state today, it would not be long before the workers themselves would ask for the repeal of the one and the exile of the other. Thinking toilers do not favor the universal eight-hour law now. They know it would do incalculable injury to business; that it would bankrupt many industries. And they feel that in the ultimate analysis the greatest sufferers would be the laboring classes themselves. The chances are this initiative law will be defeated at the polls in November. It should be. It was not born of union labor, but socialism. And while many union laborites are for it, it may be found their unionism has become wedded to and been swallowed by socialism. On the other hand probably the great majority of the masses of union labor in California are opposed thereto on the ground that, while at the present time grossly unjust to the employer, it would be inimical also to the best interests of the employe."

SOME LIVE SUBJECTS FOR DISCUSSION AT FARMERS' MEETINGS

1. Do country schools train boys and girls for farm life?
2. Which is better on the farm, bathtub or automobile?
3. Does speculation help to fix farm prices?
4. Cost and benefits of an Agricultural College education?
5. How can consumer buy direct from producer?
6. Do mothers teach daughters thorough housekeeping?
7. How does the experiment station help the farmer?
8. How to beautify homes, school houses and churches.
9. Does the farmer know how much he has invested in the farm?
10. Is the renter or retired farmer the least interested in the welfare of the community?
11. Who has the best-kept farm home in the community?
12. Are teachers and preachers practical in their work?
13. Do housewives favor the teaching of domestic science?
14. Why do many farmers neglect to paint their buildings?
15. Why do farmers permit weeds to grow in roads and fence row?
16. Do farmers make use of the parcel post service?
17. How can the country fair be improved?
18. Is it a disgrace to keep a scrub animal on the farm?
19. Is there such a thing as farm arithmetic?
20. Does agricultural extension work help the farmer?
21. Does the housewife use labor-saving devices as much as the farmer?
22. Do some farmers waste their labor and profit by planting poor seed?
23. What is the strongest influence that keeps boys on the farm?
24. Should the school house be made a meeting place for the community at least once a month?—Colorado Agricultural College.

Catalogue No. 54 C
P
Pomona Pumps for Deep Well Pumping
Pomona Manufacturing Co. Pomona, California

If interested in deep well pumping you can have a copy of this book by writing for it. It contains information about the POMONA DEEP WELL PUMP, and also valuable data on irrigation subjects. When writing ask for "Catalogue No. 54C," and state the depth of your well and its location.

The Pomona Double Action Deep Well Pump

is of the plunger type with reciprocating plungers, traveling in opposite directions, the one with a slow up-stroke, the other with a quick down-stroke, and a substantial "lap," thus having the descending plunger in place ready to receive and carry its load before the ascending plunger has reached the end of its stroke, traveling a substantial "dead" distance together, the one receiving, the other giving up its load gradually. Cylinders, valves and all other parts are made of the best materials that money will buy, and are built to stand up under heavy deep well lifts and to give years of satisfactory service.

Pomona Pump Oil

is a pure Pennsylvania product, refined especially for our particular use, and should always be used in connection with Pomona Pumps. If you require a thoroughly reliable lubricant, write us for prices and further information.

Pomona Gates and Valves

are made by us in a complete line of sizes for use in cement pipe irrigation. Special valve catalog "C" will be sent free on request.

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Jackson Horizontally Split Double Suction Pumps

Are high efficiency pumps designed to operate continuously under various conditions

Jackson Pumps mean quality—quality in materials, workmanship and design. You get quality that makes for lasting service—reliable service.

The Jackson Pump is the most efficient type of pump—because the Jackson Pump is made in special types to meet every service condition — because the Jackson Pump is made extra heavy and will last.

For farm irrigation the Byron Jackson pump is the ideal pump.

Write for Catalogue 48-B

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Los Angeles: 212 No. Los Angeles St. Works: West Berkeley, California

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"NATURE GROWN TREES"

One, two and three years old. Variety and quality guaranteed.

"The olive is the best paying fruit grown in California"

FRED L. BORUFF San Fernando, Cal.

Established 1889. Twenty-fifth Year.

The California Cultivator

Rural Californian combined with the California Cultivator

A Journal of Horticulture and Agriculture

By
THE CULTIVATOR PUBLISHING CO., Inc.
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Thursday, Sept. 17, 1914

OUR ADVERTISERS RELIABLE

We guarantee our subscribers against loss through dishonesty of any advertiser in the Cultivator. We do not attempt, however, to adjust trifling differences between subscribers and honest, responsible advertisers, nor will we pay the debts of honest bankrupts. Notice of complaint must be sent us within 30 days from date of the transaction. and the subscriber must have mentioned the Cultivator when writing the advertiser.

AT THE FAIR

Three members of the Cultivator staff are on the grounds of the state fair this week. They have in action two cameras and will give to Cultivator readers next week something of an idea of the agricultural resources of California as represented in this annual expositon. There will be no effort to give a complete review of the fair, for that will be impossible in the limited space at our command, but there will be enough of interest to make next week's paper one of exceptional value.

POTATO CONVENTION.

State Horticultural Commissioner A. J. Cook has sent out announcement of the speakers at the Potato Emergency Convention scheduled for Stockton, September 25 and 26. The convention will be addressed by Dr. A. J. Cook; W. H. Volck, Horticultural Commissioner of Santa Cruz County; William Garden, Horticultural Commissioner of San Joaquin County; William Wood, Horticultural Commissioner of Los Angeles County; N. V. Shear; Dr. W. A. Orton; John Graf and Prof. William Stuart, experts of the United States department of agriculture; Dr. Appel, a German authority; Prof. Ralph E. Smith and Prof. E. M. Jaffa of the state university; Frederick Maskew of the state quarantine service; John Irish, George Shima and George Atherton. The sessions will be held in the court house.

FARMING BY THE CLOCK

If our readers will turn to page 274 they will see a sketch of the California farmer asking a few important questions of the socialist party. Will it be able to force Dame Nature, Jupiter Pluvius, Old Sol, and some others to ring in on the time clock so that the farmer can live and market any sort of a crop? The more generally the voters inform themselves as to the real inwardness of this proposed eight-hour law, the more voters there are against it, and while it may not be wise to say anything which will lessen activity against this measure, we cannot help but feel that the vote against it will be overwhelming. The energetic workingman is beginning to realize what it will mean to him; scarcely a farmer in the state but realizes it means absolute ruin. The manufacturer, while not hit so hard, is opposed to any measure which will mean a crippling of his forces in time of need to push for bigger business.

"On November 3 vote no on No. 3."

PRIZE PHOTOGRAPHS

The first prize photograph contest has brought sufficient commendation to show that it will be immensely popular. It has encouraged the sending in of a large number of other photographs for the next contest, which will take place in the first issue of October. There are already in hand enough to show that it will be no easy task to choose the winners. The photos show California farm life in many phases.

Those who have not yet sent in photographs should be sure to get them to this office prior to September 24. This gives only the required time to get photographs into the engraver's hands and ready for publication in the issue of October 1. Note that the prizes are the same as heretofore: $2.00 for the best photograph of Pacific coast farm life, $1.00 for the second and six months' subscription to the California Cultivator for all photos retained for later use. All competing photographs become the property of the Cultivator unless they are returned within a few days after the first of the month.

SUGAR BEET SEED

It seems there is more sugar beet seed in California than appeared at first, though the supply will be exceedingly short. We have from J. A. Driffill, manager of the American Beet Sugar Company at Oxnard, a statement that his company has sufficient seed for next year's planting. In addition Mr. Driffill writes: "It is quite possible to raise beet seed in the United States, but at a very much higher cost than we have been paying for the imported seed from Germany."

From a circular sent out by sugar brokers in New York regarding the beet seed situation we quote: "Beet seed is still not available from Europe, except in most moderate quantities and at frightfully high prices. In Eastern Germany, Western Russia and Northern Austria the same condition prevails and will extend continually. The present growing beet crop and general harvests of Europe are already terribly affected. It might be well to look ahead for the effect of this war on the following crop."

The factories in California have a partial supply, but are guessing as to securing seed on contracts made months ago. It is hoped, however, that by November 1 the situation will clear up and that European seed may be received. While it is presumable that the beets may not be harvested for sugar, it is likely that the women and children will be able to harvest the seeds. In the meantime such seed as is available is offered at prices ranging from $16 to $40 per sack, plus transportation expenses.

A report to the United States department of agriculture, written by the Allen G. Freeman Company of San Francisco, representatives of a German firm of sugar beet seed growers, states that the harvesting of the seed in Germany is regularly done by women brought in the spring from Russia and German Poland, these women returning to their homes in the fall when the harvest is over. Therefore they are now on hand for the harvest work. This report further states:

"There is a very considerable percentage of last year's crop of sugar beet seed now in the hands of the German growers, last year's crop having been an abnormal one in quantity and above the wants of the beet growing world, which, added to the natural supply of this year, will be ample for the world's use. It only remains, as far as the wants in this country are concerned, for some means to be found to get this seed to a port where it can be loaded on neutral ships and brought to this country, and having no food value for man or beast, there should be no objection to its being shipped to this country especially.

"The beet sugar factories in this country have a quantity of sugar beet seed now on hand equal to one-fifth of the normal use in one season, but it is, of course, very unequally distributed, some having enough for their normal use and others none at all."

C. A. Johnson, manager of the Holly Sugar Company at Huntington Beach, writes:

"The sugar beet seed situation is still a very uncertain one. The price of seed which is so located that the buyer can be sure of getting delivery is exceedingly high, say $55.00 to $60.00 per bag, and right now I do not know where it would be possible to get any seed even at that price.

"At the outset of the trouble in Europe we had the feeling that the war would not last a great while, and that it would be possible later on to get the beet seed the same as in other years. Nevertheless as a matter of insurance we purchased seed at the high prices attained and have sufficient on hand in our own warehouse to plant our usual amount of acreage for this factory, although it goes without saying that seed will be much more economically used for next year's crop than has been customary. It is possible to do this and still get a good stand of beets by using extra care in preparing the seed bed and doing the planting during the right time, etc. It may be necessary to cut out some ground on which it has always been difficult to get a stand and which, therefore does not normally yield a fair crop.

"The sugar factories have succeeded in enlisting the assistance of the United States department of commerce, and as there are quite large quantities of seed in warehouses in Europe, we believe a way will be found of getting it to a neutral port, in which case we believe there will be ample seed for the entire country, having in mind that in all probability not all of the mills in United States will operate next year. Of course, if this seed is now available it will not help the factories that have paid the high prices, except to make the quantity for planting more plentiful.

"We believe the situation in California to be as good as it is in any other part of the country in this respect."

From Pres. A. R. Peck, of the Anaheim Sugar Company, we have the following word:

"The department of commerce in Washington is at present undertaking ot cooperate with the beet sugar manufacturers of the United States to arrange for transportation of beet seed from points in Germany to Amsterdam or other neutral points in Holland, with the hope of being able to supply all the beet seed required in the United States next year, and there is considerable prospect of this being successful.

"We have only recently received 300 bags of seed in New York shipped from Holland, and if transportation facilities can be arranged on the other side as stated there will be no doubt but that delivery can be made in time for February planting."

Agricultural News Notes

The orange crop of Palestine is largely shipped out in the months of February and March, going to England, the continent of Europe, America and even Australia.

Heavy demand for horses and mules suitable for army purposes for nations engaged in the European war has caused prices to advance sharply at the Chicago stock yards.

The German government, so it is reported, has put in a cotton press at Tsingtau and intends to charge 10 cents (gold) a bale for pressing, as against the present price of five times this amount, so as to encourage cotton growing in Shantung province, China.

The Canadian Pacific has made a special rate of one cent a mile for farm laborers destined for the Saskatchewan farms to take care of this year's large harvest. It is also announced that those unable to pay will be transported by the railway company free.

Under the Forest Homestead Act, which was passed in June of 1906, 57,762 acres of land in the national forests of California were listed to applicants during the fiscal year ending June 30, 1914. There were 510 applications made under the Forest Homestead Act.

Recently experiments have been made looking to the use of the Chinese dried persimmon for manufacture into jelly. It is stated that the experiments have been successful and that Tsinanfu, the center of a large persimmon-producing area, is shipping dried persimmons abroad for this purpose.

Cattle must have health certificates showing that they have passed the tuberculin test before they can be admitted to Illinois for breeding or dairy use. This prohibition was embodied in a proclamation recently issued by Governor Dunne. Preparations are being made, it is stated, to test in the courts the legality of the governor's order.

Agriculturally last year Italy was prosperous, for the crops generally were abundant, although some regions suffered because of unusual weather conditions. This was especially so in Sardinia and Sicily, where almonds and olives suffered from drouth and cold. Then there was a short silk crop, and this assisted materially in the general unrest of business.

Agricultural News Notes of the Pacific Coast

Northern California

The hop festival at Ukiah will be held September 15-20.

The Yuba City packing house is running full handed on dried fruits.

Some days shipments of grapes from California are in excess of 100 cars.

Delevan, Colusa County, is importing a large number of pure breed Holsteins.

Officers from the war department have been buying army mules in Glenn County.

Much interest was taken in the dairy contest at the rice exposition at Gridley last week.

Highway work in Yolo County will be pushed to the utmost during the coming few months.

Mendocino County owners of timber lands have organized a forest protective association.

Improved irrigation facilities of Shasta County are giving an impetus to the dairy industry.

The first silo in the dairy section about Anderson, Shasta County, is just being constructed.

It is rumored that the big sugar factory at Hamilton, Glenn County, will operate next year.

Horticultural Commissioner Hecke of Yolo County is making careful experiments in the pruning of apricots.

Every foot of available space was taken at the Humboldt County fair which was held at Ferndale last week.

The county adviser of Napa County reports serious attacks of wooly aphis in the apple and pear orchards.

The cured fruit association of Chico, Butte County, has begun the shipment of this season's dried fruit.

The Central California cannery at Yuba City recently broke its record by totaling 2050 cases in one day's run.

Nevada County's shipment of Bartlett pears this season is declared to be the finest in quality ever sent out of the county.

The exposition management reports work on the grounds more active than ever and that there will be no serious result from the European war.

The sanitary engineer of the California Immigration and Housing Commission reports camp conditions in the Wheatland hop district as entirely sanitary.

Boys' agricultural clubs of Grass Valley and Nevada City, Nevada County, are talking of awarding to one boy in each club a trip to Washington, D. C.

The California Almond Growers Exchange has named the following prices: Nonpariels, 20; I. X. L., 19; N. P. U., 18; Drakes, 15; these f. o. b. trade prices.

The exhibit palaces at the Panama-Pacific International Exposition at San Francisco in 1915 will be open by day, closing at sundown, but the concessions district, the great "zone" will remain open until eleven o'clock at night. Admission to the exposition grounds for adults will be 50 cents, while for children under twelve it will be 25 cents.

Central California

Lindsay, Tulare County, is to have a new canning plant.

The cannery at Tulare is running full handed on tomatoes.

Organization of a farm bureau is progressing in Kern County.

The Kerman alfalfa mill is ready to start on its season's work.

The green fruit packing houses are practically all working now on dried fruit.

It is claimed the war will advance the price of California olives $40 to $60 per ton.

Moving pictures have been taken of the cattle feeding operations of Tulare County.

Rice growing is proving a success in Kern County, where it has been tried out on alkali lands.

The packing house at Dinuba has been opened after several weeks and will run on Emperors until the season closes.

October 7th has been selected as Watsonville day at the California Apple Show, to be held in San Francisco.

The work of fumigation against the grey scale in Tulare County citrus orchards is reported as thoroughly satisfactory.

The California Apple Show management has issued its premium list. Prize money this year amounts to more than $3500.

Modesto, Stanislaus County, will be the scene of the California dairy fair, which will open October 14, and continue four days. There will be stock judging and butter scoring contests.

The Associated Raisin Company has just issued a notice to packers that orders have been received for more seedless raisins than will be produced. The association is compelled to pro rate among packers the available crop.

Members of the Dinuba Cured Fruit Exchange are well satisfied with their first season's activities. Most of the fruit handled has been figs and peaches. Members have decided to hold the fruit until the market is stronger.

Grain farmers in the Ducor district of Tulare County are holding their grain for the rise in prices expected because of war conditions. It is estimated that there are in this district 30,000 bags of wheat still undelivered to warehouses.

The Tulare County highway commission is discussing with taxpayers the advisability of a large issue of road bonds, the proceeds from the sale of which are to be used in constructing bridges along the line of the state highway and roads connecting with the state system.

Stockmen of Kern, Kings, Fresno, Santa Barbara, San Luis Obispo and Southern Monterey Counties met in Paso Robles on the last Saturday in August and organized a stockmen's association for Central California. Howard V. Jack was elected president; Fred Bixby, T. W. Dibblee, Frank Munser and J. E. Redman, vice-presidents; Eaton Mills, treasurer, and Ernest Vollmer, Paso Robles, secretary.

Southern California

Redlands orange growers are spraying for red spider.

The Orange County blackeye bean crop is being harvested.

Walnut growers of Whittier report crop above the average.

A lemon marketing association has been formed at Yorba Linda, Orange County.

The first shipment of walnuts from Fullerton, Orange County, will be made about September 15.

Orange County will harvest about 16,000 tons of chili peppers, worth a quarter of a million dollars.

The new cannery of the Orange County Vegetable Association has been opened at Villa Park.

The walnut harvest over the southern part of the state is at least two weeks ahead of the average season.

The Cured Fruit Association at Santa Paula has just shipped two carloads of dried apricots to Rotterdam.

The national banks of Imperial Valley will advance $360,000 to cotton growers to aid them in picking their crop.

Threshing outfits are at work on the big San Joaquin ranch in Orange County, cleaning up about 1000 acres of beans a day.

San Diego merchants are interested in a movement to develop the trade of the Imperial Valley, carrying merchandise by auto truck.

Redlands orange growers are estimating the coming crop of navels and the general opinion is that there will be a big crop of good quality.

The Arboricultural Association of Southern California met at the Glenwood, Riverside, September 10-11. The president of the association is J. M. Paige.

The LaVerne Orange Growers' Association has decided to erect a $50,000 precooling and ice plant with capacity of 500 cars. The association has also decided to handle lemons at its packing house.

Shipments of tomatoes began going out of Fullerton, Orange County, the middle of the month. The acreage about Fullerton is estimated at about 550. Nearly all the crop goes to eastern markets.

Horticultural Commissioner Beers of Santa Barbara County states in his August report that the walnuts are unusually fine in size and quality this season, and that the tonnage will be practically normal.

Cotton growers of the Imperial Valley are receiving relief through a large fund which has been placed at their disposal. An advance of $20 will be made on each bale of cotton, warehouse receipts being the security.

Farm Adviser Wm. B. Parker of Ventura County has announced dates of meetings at the various advisory centers as follows: Fillmore, the first Monday evening of each month; Oxnard, the second Wednesday evening; Camarillo, the second Friday evening; Santa Paula, the last Tuesday evening; Simi, the fourth Wednesday evening; Mound, placed provisionally on the second Monday evening.

The Coast

Arizona state fair was held at Phoenix, November 9-14.

Brigham City, Utah, observed Peach Day, September 9.

The agricultural fair at Willcox, Arizona, will be held October 29-31.

North Yakima, Washington, recently shipped over $300,000 worth of sheep to Chicago.

Recent heavy rains are filling the Roosevelt reservoir of the Salt River Valley, Arizona.

Acreage of cotton in Arizona has increased from 4000 acres last year to 18,000 this year.

Twenty miles of pipe have been laid to conduct irrigation water to tracts near Spokane, Washington.

Grain producers of Long Valley, Idaho, are harvesting the biggest crop of wheat ever grown in that section.

Live stock breeders of Enterprise, Oregon, are shipping more live stock than during the same period for years.

Cotton growers near Chandler, Arizona, have arranged with 100 Indian cotton pickers to handle the local crop.

Sugar factories at Odgen, Utah, opened on September 7; others in the same state will be opening as late as the end of the month.

A meeting of Maricopa County, Arizona, farmers was held in Phoenix last week to discuss matters of better irrigation facilities.

The North Pacific Fruit Distributors recently held its directors meeting and discussed market conditions caused by the European war.

An important meeting of lettuce growers was held at Phoenix recently and the matter of affiliation with the Farmers Union discussed.

Arizona entomologists are urging a greater number of turkeys to control the grasshopper pest, claiming this means far preferable to the poisoned bait.

Truck gardeners at Chandler, Arizona, are uniting in the production of lettuce. Effort will be made to ship winter production in large quantities to eastern markets.

Smut explosions and the burning of threshing machines and grain have occurred in the county of Whitman, Washington, so as to cause the enormous loss of $2,000,000.

Arizona has a law which compels every stock owner to provide drinking places for cattle in pasture, or at least prevent animals from suffering from lack of water or shade.

The fair which was to have been held at Victoria, British Columbia, has been called off on account of the European war, and race horses and other features have been diverted to other Northwestern fairs.

Within the past two months 19 new fruit growers associations have united with the Northwest Fruit Distributors. This means an increase of membership to the extent of 3000.

Milton, Oregon, estimates its shipments of fruits as sufficient to make a stack of fruit one mile long, 12 feet high and eight feet wide, and that it will aggregate 3,000,000 pounds.

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STANDARDIZED.
EASY AND SAFE TO USE
INEXPENSIVE

KILLS LICE
ON ALL LIVE STOCK
DISINFECTS.
CLEANSES.
PURIFIES.

It has so many uses that it is a necessity on every farm.

USED IN THE TREATMENT OF MANGE, SCAB, RINGWORM, SCRATCHES, ETC.

Destroys Disease Germs
DRIVES AWAY FLIES
For Sale by All Druggists
Write for Free Booklets

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Hogs can be produced at Fairmead for 4 cents per pound. Present prices, 8 to 10 cents **cash**. That's farming for real money. Good cows at Fairmead are bringing in $8.00 to $10.00 each **cash** per month. One acre of alfalfa at Fairmead will support a cow or 12 to 20 hogs the year round.

Why not farm for money at

Fairmead

The can't-be-beat fruit and alfalfa section of the San Joaquin Valley, where land prices are still low. Fill out and send today the following coupon:

Co-operative Land & Trust Co.,
Owners,
595 Market Street,
San Francisco, Cal.

Kindly send me your free booklet, "How to Obtain a Farm at Fairmead on Easy Terms."

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Address ....

Thoroughbred Poland China Swine
High Grade Stock of Best Strains.
Young Stock For Sale
M. BASSETT **Hanford, Cal.**

The California Cultivator is unexcelled as an Advertising Medium

Live Stock and Dairy

RAISING HOGS ON ALFALFA

Written for the California Cultivator

By Leroy Anderson

A Ventura County subscriber asks if raising hogs on alfalfa is generally considered successful; also what gain should be made by a young pig running on alfalfa, and where to obtain young pigs for feeding.

Alfalfa alone is not found to be a successful ration for hogs. It affords the best pasture known, but to make the most and cheapest pork some grain should be fed with it. Authorities in hog lore say that alfalfa is a maintenance ration, i. e., a mature hog will keep alive and possibly keep its weight by feeding on alfalfa alone, but something else must be fed if the hog is expected to grow. In this present day it is found that the most rapid growth of food animals is the cheapest—the sooner a pig can be grown to market size and conditions the most profit usually.

A pig at eight months should weigh from 200 to 250 pounds, but this can be obtained only by liberal feeding. Henry in his "Feeds and Feeding" reports an experiment in point at the Nebraska station with feeding corn to pigs on alfalfa pasture.

"Snyder of the Nebraska station grazed three lots of 47-pound pigs on alfalfa pasture during each of two summers. One lot received a light, the second a medium and the third a full allowance of shelled corn. The combined results of the trials, lasting 98 and 119 days respectively, are averaged below.

"Light, medium and heavy feeding of corn to pigs on alfalfa pasture:

Daily allowance of corn	Average daily gain lbs.	Corn for 100 lbs. gain lbs.
Lot I. Shelled corn, 0.5 lb...	0.4	128
Lot II. Shelled corn, 1.1 lbs.	0.5	221
Lot III. Shelled corn, 2.6 lbs.	0.8	331

"It is shown that Lot 1, fed a light grain allowance on alfalfa pasture, required only 39 per cent as much grain for 100 pounds gain as Lot III, fed a full corn allowance. Lot III however, made twice as rapid gains, as Lot I. Snyder concludes that a light grain allowance on alfalfa pasture is not economical for growing pigs unless alfalfa is abundant, grain high in price and market conditions warrant holding the pigs. It is usually more profitable to feed two pounds or more of corn per 100 pounds of pigs than to feed a lighter ration. Cottrell of the Colorado station states that alfalfa makes the best hog pasture and that hogs fed grain daily will make from 500 to 1000 pounds of gain during the pasture season from an acre of good alfalfa, after deducting the gain which the grain would make if fed alone."

Barley has about the same feeding value as corn and is the universal grain for hogs in California. A 100-pound pig could be fed profitably two pounds of barley a day in addition to alfalfa pasture with the present price of barley and the present market for pork. As the pig grows the grain rations may be increased in proportion. Some feeders arrange a large hopper which is filled with rolled barley and which feeds it down as the pigs eat out at the bottom. The pigs then have the grain constantly before them and a saving of labor is made in feeding. One Sacramento Valley farmer who fed this way, with his hogs running on alfalfa pasture, told me he received $3.50 per 100 for his barley through making it into pork. Kafir and Egyptian corn have about the same fattening value as barley or maize.

Young pigs or feeders are not usually found in the city markets. They may be purchased in localities where many pigs are raised. I would suggest writing to the Ventura County farm adviser, Wm. B. Parker, at Ventura. He may know of some for sale. Also Roland R. Mack, Bakersfield, farm adviser for Kern County, also the California Polytechnic School at San Luis Obispo. Their animal husbandry instructor, Mr. C. W. Rubel, may know of some.

INCREASING MEAT PRODUCTION

Written for California Cultivator

By Sacramento Valley Contributor

The greatest business in the world today is the production of food for the human race.

Population is increasing much more rapidly than the supplies of meat, grains and vegetables. As long as there have been rich lands unoccupied, an increase in the production of food stuffs has required simply the opening up and cultivation of virgin prairie lands, either in America or elsewhere. Now, in order to provide more food for the steadily increasing population of the globe, the efficiency of the elements of food production must be increased. More and better crops must be grown on every acre of land, and we must have types of animals that will make more meat for the food consumed.

Any one who can develop a grain that will increase production by 100 pounds per acre is a benefactor to the human race, and the same is true of the one who develops a type of meat-making animal that produces more good meat from the same food and in a shorter time than now required by types in use or available.

We have had several classes of breeders of live stock since the improvement of domestic animals and the formation of breeds began.

To one class belong those who attempt faithfully to breed animals true to the accepted type—content to let well enough alone, but honorable in that they discard misfits and culls, and by careful selection maintain or increase the standard of their productions.

Those of another class pay little attention to anything but pedigree and color, and are in the business for revenue only.

In another class belong the great constructive and creative breeders of plants and animals. There are not many of them in the world, but it is to them that we must look for help in solving the world's food problem.

The creative breeder must have an ideal and if his work is to be of great value to mankind, this ideal must be of greater utility than anything now in existence. Amos Cruickshank had in his mind a blockier, more evenly covered, better meat making Shorthorn, than was then being bred or he could never have developed Cruick-

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If you are selling cream or making butter and have no separator, or are using an inferior machine, you are wasting cream every day you delay the purchase of a De Laval.

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Six years' study of dairy operations on over twenty farms in three different parts of Minnesota, showed Prof. Cooper of the state experiment station that dairying is most profitable in the "Holstein section" of the state.

In 1905, the average profit per cow was $10.10. In 1909, it was $38.45 per cow. Increase was due to improved herds, purebred registered Holsteins having been substituted for grades.

When dairying is put on a systematic basis, the Holstein cow comes to the front. For facts and figures

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shank Shorthorns. The great improvers of the breeds of sheep worked for years toward an ideal before it was produced, before an animal was developed that carried a larger quantity of high class meat over shoulders, back, loin, rump and thigh. The improved breeds and types of hogs are far more efficient pork making machines than were their raw boned, long legged predecessors.

It is important that this improvement be carried on with every animal or bird that is capable of increasing the world's food supply, for the time is rapidly approaching when food must be produced in larger quantities not only by farmers but by city dwellers as well.

In densely populated China, every available area is used for growing vegetables, poultry or stock. In this country thousands of chickens and pigeons could be grown in limited quarters but where they can be given the care and attention they require. Farmers who handle large acreages often cannot produce poultry in large numbers because their time is too fully occupied with field work and the care of other live stock.

In Marin County, at Sleepy Hollow Ranch, R. M. Hotaling is demonstrating what can be done in the way if improving the meat making ability of pigeons. By judicious crossing, he has in four years produced a bird that for neatness, compactness and all round usefulness, is far superior to any of the parent stock from which the ideal he has in mind has been produced. It will probably require many more generations of birds to fix the type, but when it is accomplished a great good will be done for mankind.

The world needs more great breeders, and every encouragement should be given those who have ideals, and with them the determination to work them out to a successful conclusion.

PROTECTION OF WOUNDS

When an animal is wounded it is important to treat the wound in such a way as not to prevent its healing and yet to prevent screw worms and house flies from attacking the open surfaces, laying eggs, or carrying infection to the animal.

The screw worm particularly deposits eggs in wounds, and there are other flies that may deposit their eggs in this way. The larvae, or maggots hatching from these eggs, infest the wound and burrow more or less extensively in the surrounding tissues, so that serious damage may result.

The housefly alights on wounds to suck up the exudate, and is a cause of considerable annoyance to animals. It prevents wounds from healing and may introduce agents of infection which adhere to its body.

The department of agriculture, in a bulletin on repellents for protecting animals from the attacks of flies, quotes the following formulas for application to wounds:

Jensen gives three formulas of repellents for application to wounds:

Formula No. 1: Oil of tar, eight ounces; cottonseed oil to make 32 ounces.

Formula No. 2: Powdered naphthalin, two ounces; hydrous wool fat, 14 ounces. Mix into an ointment.

Formula No. 3: Coal tar, 12 ounces; carbon disulphid, four ounces. Mix; keep in a well-stoppered bottle and apply with a brush.

Mixtures Nos. 2 and 3 are said to adhere to moist surfaces, and No. 3 is said, in addition, to form a coating over raw surfaces and protect from the screw-worm fly.

The editor at the close of the article in which the above are given adds the following formula: Oil of turpentine, one dram; phenol, one dram; cottonseed oil to make four ounces. Mix and apply freely to wounds.

It is stated that this remedy is highly effective and is used widely in the South. It is said to induce healthy granulation of wounds.

HOW TO LOSE MONEY IN DAIRYING

By following these rules any dairy farmer can insure the failure of his business, says Professor G. W. Barnes, farm advisor on livestock of the University of Arizona agricultural extension service:

1. Use scrub bulls. This will run down any herd in quick time.

2. Let the bull run with the cows. This will make their milk yield fall off and their calves come when least desired.

3. Do not test the cows for milk production or butter-fat. In this way the poor cows will lose enough money in a year to buy several good ones.

4. Keep only the heavy eating cows which produce little milk.

5. Raise only the heifers from nonproducing cows.

6. Feed sour and rotten feeds.

7. Do not supply pure water, but make the cows drink out of mud holes.

8. Furnish no shade during the summer months.

9. Have no shelter for the cows in cold and inclement weather. This will reduce the milk flow from 35 to 50 per cent.

10. Milk at irregular intervals.

11. Hire rough milkers who do not milk thoroughly.

12. Get in the cows with the assistance of dogs.

13. Feed only enough to keep the cows alive. This will surely stop the milk flow.

14. Never pay any attention to udder troubles. Beautiful cases of garget may thus be developed.

15. Buy cheap dairy cows anywhere. In this way one may succeed in introducing contagious abortion into the herd and community.

16. Keep the dairy buildings and utensils as dirty as possible. A very inferior quality of milk may thus be produced.

LIVE STOCK AT WHITTIER SCHOOL

In a recent item regarding the dairy barn at the Whittier school we were unable to give information regarding some of the dairy animals which were there in charge of Mr. W. H. Taylor, superintendent of the farm. We had written Mr. Fred C. Melles for exact information which we had expected to use with the items and the photographs. These did not arrive until after the paper had gone to press, so we add these few statements from Mr. Melles' letter.

There are on the farm 30 acres in alfalfa and 20 acres in corn. The milking barn which we illustrated

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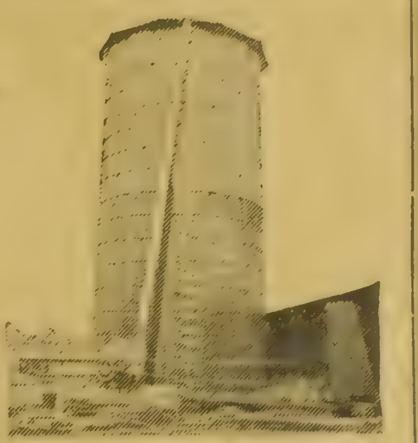

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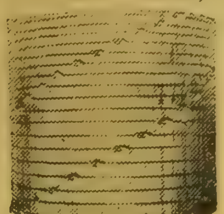

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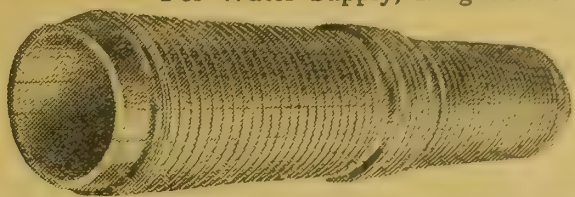

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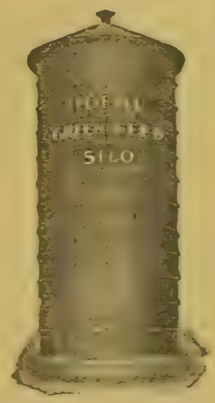

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When writing advertisers, mention The Cultivator.

has a capacity of 48 cows, but there are now only 30 milking. The hog pens which were illustrated are 100 by 200 feet and the dipping tank is 6 by 12 by 6 feet. The barn was designed by the state engineering department of which W. F. McClure is director, and George A. Stewart was in charge of construction.

To give an idea of the character of the dairy, we mention the names of some of the animals which are now milking: Mutual Ormsby De Kol De Peiterje, Segis Beryl Hengervelds Favorite (a granddaughter of King Segis), May Rouble Hartog, Princess Clothilde Pieterje, De Kol Artis Pieterje Favorite Queen 2nd, De Kol Pontiac Korndyke (a daughter of Pontiac Aggie Korndyke). A number of granddaughters of King of the Pontiac and granddaughters of De Kol 2nd Mutual Paul.

The prize winner of the whole herd is Hartog Pontiac, a son of King Pontiac, and one of the finest Holsteins in the country, held at the present time at $50,000. In addition there are a couple of other fine animals at the farm, Rowena Maid Mutual and Sir Riverside Tommy.

LIVE STOCK AT THE FAIR

(Continued from Page 267)

the coast, were making remarks within the writer's hearing, of the highest praise for the work being done on the Pacific coast.

Let us note the character of sheds, pens and stables furnished to those who bring their stock to be shown. We find a quality of comfort as well as style of architecture nearly and many times superior in fitting to those of the eastern fairs, and the care taken by the grooms in attendance is that of pride, intelligence and deep interest in the future industry of the state. Incidentally it might be mentioned that there are many prizes being given solely for the benefit of the grooms. Let us note the intelligence manifested by the breeders in their fitting for the exhibit and we find in several instances a touch really superior to that in the eastern ring.

All breeders have a friendly spirit as well as friendly rivalry existing and joke and josh each other as of old. The prices that some of them are obtaining in their private sales are exceeding those obtained from the states of Illinois, Iowa and others of the middle west.

Now the writer will take you for a little ramble through the barns and stock pens.

First, let us enter the horse barns. Here we find a large exhibit of farm horses; the kind we are all striving for in service and price, numbering over 50 head. We find many colts, of splendid conformation, with their mothers, ofttimes nearly full-blooded animals, and we find the old farm plug kept up in good condition and brought here as an example to be noted. On the other hand, turning to the thoroughbred stallion department, we find the latest importation from France, numbering 10 head, and chased for three days by a German cruiser; the last to be exported. On the other side of the barn a splendid exhibit of Shires, numbering 12 head, which are some of the best on the Pacific coast. You will note that the Percherons are predominant; many of the best having been raised within the state. Wandering into another barn the trotters confront us, and the pride manifested by the owners in home-grown stock impressed the writer with the fact that California still maintains her reputation as a trotting state.

That barn in the far corner contains 32 head of the mule family and fine specimens they are, too.

Now let's hasten, for here are the cattle barns, and we must look over the beef and dairy breeds ere we pass on. The representation of the Shorthorns and Herefords is extensive, as well as of high quality in breeding. The writer might touch upon the above breeds to a greater extent, but he will save that for the following issue and give you an idea of what this state produces in dairy cattle, for truly it is coming to the front as a dairy state. Here we find the famous King of the Pontiacs, there a large representation of the De Kol family and many fine granddaughters of the Johanna blood; the dairy division, numbering the Jerseys, which are represented in some splendid quality animals, has a total of about 200 head. The contests are on and soon we will know the ones that stand at the top.

Now, across the grounds, and we will see the hogs. A finer bunch has never been exhibited in the history of the California state fairs. Four hundred and forty-one. Yes, and they are beauties, every one of them. The Berkshire breed, numbering among them famous animals from the Robin Hood and Masterpiece lines, and there are also several champion winners, while the Poland-Chinas show the best from the famous eastern herds. Duroc-Jerseys, Chester Whites and two Hampshires, numbering about 150 from the representative herds of the state, in fact, the hog men never have shown a greater interest in their favorite animals than is now being manifested on the fair grounds.

But did you want to see the sheep? Well, here are several pens from five representative ranchers and numbering 130. Yes, and there is a nice display of Angora goats, too, which, by the way, bid fair to build up one of the future industries of our state.

Now we have but slightly gone over the situation, but it is in such a manner that it will be hoped by the writer you will follow the winnings to be given in our next issue and increase your herds with some of the best.

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Try a sack or two and note with what relish your stock take to it. Ask your dealer for "Larrowe's MOLASSES-DRIED Beet Pulp."

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Veterinary

Answers in this column by Dr. Wm. Petrie, 2714 South Harvard Blvd., Los Angeles, are without charge. For immediate mail answer remit $1.00. In writing questions give full symptoms or particulars of injury of animal.

Chronic Rheumatism

I have a large horse eight years old that for three or four years has been gradually getting stiff in front. In taking a step after standing his joints make a cracking noise, particularly those of the shoulders. A year ago I consulted a veterinarian about him and he advised getting him shod with elevated heels, which gave some relief. Recently I took him to another veterinarian and he applied blisters to shoulders and ankles, which also gave some relief. The same veterinarian thought he was subject to rheumatism. He has a thick neck and is not proportionately wide across the shoulders, which necessitates the use of a sweeny collar. He is worked mostly in vineyard and orchard and very little on the road. In starting a heavy load after standing some time he humps his back as though in great pain. Do you think rest and running in pasture would cure him?—Subscriber, Parlier.

The symptoms you give would lead one to believe that the horse has chronic rheumatism. After allowing it to run so long it will probably take some time before marked relief would be shown from any treatment. Rest and pasture should benefit him very much. Get the following medicine for him: Salicylate of soda, four ounces; bicarbonate of soda, one pound. Mix and give a small tablespoon once a day. Also feed with his grain a teacup of ground flaxseed with the oil left in once a day.

Malignant Catarrh

I have a Holstein bull which is feverish at times. Appetite is fairly good, but he eats slowly and as though he did not care whether he ate at all or not. His head and nose are very hot. He holds his head as though it hurt him all the time, and when he lies down he holds it straight out. He seems to be stiff and very weak. When I lead him he will stumble and fall over a very small object. His eyes and nose run a great deal of the time and he seems to be losing flesh constantly. — Subscriber, San Diego.

The symptoms you give are those of malignant catarrh. It is an infectious disease and other cattle should be removed from the place, at least a short distance, and the place disinfected with lime. It is a disease that does not spread very rapidly, and the one case may be the only one on the place, but usually in a short time one or two more may take it. The reason he holds his head out and does not care to eat is that he has a very sore throat. A liniment made of equal parts of olive oil, turpentine and aqua ammonia, applied to the throat and neck once a day, would probably help to relieve the animal. For internal treatment give one dram of calomel once a day for a week. Also get the following and use it as a gargle for the throat morning and evening: Chlorate of potash, eight ounces; tincture of iron, six ounces, and water enough to make one quart. Put two ounces of this solution in a long-neck bottle and add a pint of water. Drench the bull with this, allowing him to swallow a little at a time so it will have a chance to wet the throat well. Sponge the nose and eyes with warm water that has a little borax in it and keep him in a shady place so the light will not hurt his eyes. If you have more than one animal affected like this you had better report it to the county or state veterinarian.

Profit in the Poultry Yard

MARKETING POULTRY PRODUCTS

By Jean A. Koethen.

(Concluded from last week.)

The package must be attractive and delivered in good order. The postoffice department requires that eggs be packed so that they will not break, and there are various kinds of cartons and containers for this purpose. The postoffice requires that this container be wrapped so that nothing can escape from the package, and that each egg be wrapped separately in cotton, excelsior or some such material.

The cost of container and wrapper for two dozen eggs is estimated at eight cents. The postage will be about nine cents. The cost, therefore, of wrapping and mailing two dozen eggs will be approximately seventeen cents. But the wrapping and container for four dozen eggs cost little more than for two, hence the economy of a large package.

The department of agriculture at Washington has been making careful investigation of the practicability of parcels post for the farmer, and has come to the conclusion that "it is of particular value to the man whose flock is too small or who lives too far from express service to permit him to ship his eggs in the regular commercial case which holds 30 dozen." In its experiments the department found that less than 3.6 per cent of the eggs were broken, and less than 2.3 per cent were absolutely wasted, for the rest, though broken, could be used.

Preparing Market Poultry.

The farmer and general poultryman will usually do better if they sell their surplus cockerels and old hens alive. The preparing of market poultry is a specialty in itself, and dressed poultry is so perishable that, except for private customers a market is hard to find.

Chickens that are to be dressed for market should be fed a fattening ration for a couple of weeks, then confined and kept without food for from 24 to 36 hours before killing. If they have water they do not need food, and they are more easily dressed without it.

What is called "dry picking" is considered the best method of preparing market poultry. Fowls for use at home may be decapitated and scalded in the time-honored way, but they do not present the neat appearance of a bird that has been "stuck" and dry picked. Bleeding is often imperfect, and this gives the fowl a blotchy appearance which does not attract customers.

To dry pick, first hang up the bird by its legs, then, according to directions of the department of agriculture, "grasp it by the bony part of the skull. Do not let the fingers touch the neck. Make a small cut with a small, sharp-pointed knife on the right side of the roof of the mouth, just where the bones of the skull end. Brain for dry-picking by thrusting the knife through the groove which runs along the middle line of the roof of the mouth until it touches the skull midway between the eyes. Use a knife which is not more than two inches long, one-fourth inch wide, with a thin, flat handle, a sharp point, and a straight cutting edge."

These directions sound rather brutal, and I have never had the nerve to try them, but I dare say the method is quite as humane as decapitation, and as long as the market requires that dressed fowls keep their heads, the poultryman who wishes to sell dressed fowls will have to comply with them.

POULTRY SHOW DATES

Riverside, Oct. 13-17, 1914, County Fair Poultry show, E. I. Hammond, secretary.

Anderson, Cal., Oct. 22-24, 1914, O. W. Dais, secretary.

Stockton, Cal., Oct. 28-31, 1914, W. H. Mackay, secretary.

Sacramento, Cal., Nov. 2-7, 1914, C. A. Wilkins, secretary, Sacramento, Cal.

Santa Cruz, Cal., Nov. 11-14, 1914 inclusive, E. J. Harran, secretary, Santa Cruz, Cal.

Petaluma, Cal., Nov. 11-16, 1914, Thomas McGuire, secretary.

San Mateo, Cal., Nov. 12-15, 1914, Fred West, show secretary, box 701, Burlingame.

Willows, Cal., Nov. 18-21, 1914, Otto F. Schuchard, secretary.

Oakland, Cal., Nov. 24-29, 1914, Chas. G. Hinds, secretary, 535 42nd street.

Pasadena, Cal., Dec. 1-5, 1914, M. D. Cartwright, secretary, Pasadena, Cal.

Modesto, Cal., Dec. 2-5, 1914, A. D. Roberts, secretary.

San Francisco, Cal., Dec. 8-13, 1914, inclusive, W. H. Ingram, secretary, Fruitvale, Cal.

Porterville, Cal., Dec. 15-17, 1914, A. D. Fawcett, secretary.

Phoenix, Ariz., Dec. 23-26, 1914, Arizona state show.

Newburg, Ore., Jan. 5-9, 1915, C. Duer, secretary.

Coeur d'Alene, Idaho, Jan. 6-9, 1915, O. A. Laaks, secretary.

Los Angeles, Cal., Jan. 6-12, 1915, Henry H. Mumford, secretary, Prospect avenue, South Pasadena, Cal.

Albany, Ore., Jan. 7-10, 1915, E. Schoel, secretary, Albany.

Tacoma, Wash., Dec. 29-Jan. 2, 1915, J. A. Caddey, secretary.

If properly "stuck," the bird will bleed freely. As soon as it begins to bleed, a blood can is hooked onto the fleshy part of the lower mandible, and the picking begins. Right now is the time when the feathers come out most easily, and they may be "wiped off" with the hand in the direction in which they grow with little effort. If they are pulled in the opposite direction, there is more danger of tearing the flesh, and the feathers do not come out so readily.

Fowls picked for sale in the open market are usually not drawn, but private customers expect to receive them, as a rule, ready for cooking. To draw, cut a circle about the vent, so that it comes away in one piece with the lower intestine. If the fowl is held in very hot water a few seconds after it is dressed it looks plumper and more appetizing.

Dressed chickens sent by parcels post should be neatly wrapped in clean white cheesecloth. A bit of parsley tucked inside the package adds to its attractiveness. In the sale of both eggs and poultry, appearance counts for more than is commonly supposed. Whoever doubts this should take a look at the poultry displayed for sale in the show case of any high class city market. Doesn't it look "good enough to eat," all white and plump and garnished with parsley? It is not enough that things should be good; they must look good. Plenty of people are willing to pay a little extra for things that look as good as they really are, and these are the customers the man who bids for private trade must find.

MORE MONEY FROM EGGS

By H. L. Kempster.

Bad eggs cause farmers a loss of millions of dollars annually. Government experts estimate that five per cent of the eggs marketed have developing chickens and that three per cent are "rots" due to the embryo decaying. All these losses could be avoided by keeping roosters out of the flocks, thus having only infertile eggs produced. If Missouri farmers would follow this plan, they could save one and three-fourths millions of dollars annually.

Infertile eggs produced by flocks in which there is no male bird are the only kind that can reach the consumer in good condition during the hot summer months. The only object in having the male bird in the flock is to get fertile eggs for hatching purposes. Now that the hatching season is over, the Missouri College of Agriculture urges all farmers to sell off all the roosters or shut them away from the hens.

Last year in July and August nearly one-half the eggs leaving the farms were unfit for food. The farmer, as a result, received a low price. Prevent that loss this year by getting rid of the rooster. Now is the time to act to prevent future losses.

Growth, development, increase in power must come from within. The man or woman, to achieve, must be born again. Accomplishment is the result, not of fitness, but of determination to be fit; not of preparedness, but of striving for preparation.

Every woman should be interested in the outside appearance of her home. Her great opportunity to cultivate a love for the beautiful should not be neglected.

The Fresh Air Brooder Stove

It exhausts warm **Fresh Air** from its **Base** to the chicks. If you use our stove you can't get away from proper **ventilation. Our 1915 Brooder Stove** is by far the best model we have ever produced. Let us send you our **New Catalogue.** It is full of splendid information and value to you with any **system.**

J. E. Kresky
Petaluma, California

The Summer Season

Don't expect to cram for eggs in the fall without preparation during the summer.

COULSON'S EGG FOOD

used during the summer will reward you with a good egg yield in the fall. Secure it from any reliable poultry supply house.

Coulson Co
PETALUMA, CAL.

BEWARE OF IMITATIONS

Insist on Having
French's Poultry Mustard
Sold in Sealed Packages Only

French's Poultry Mustard is a scientifically manufactured article containing the flours of different mustard seeds so blended to produce the greatest strength in the volatile principle that is desired, and is required to produce the fortunate results arrived at by the users.

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A teaspoonful to six to twelve fowls fed daily in dry or wet mash. Booklet for the asking.

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FISH MEAT MEAL

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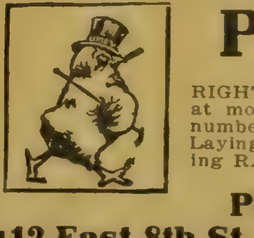
42 Beale Street San Francisco, Cal.

FOR

Always ask for this brand, and you will never buy an inferior fish meal. Guaranteed to be the best egg-laying, health-giving meat food for poultry. Splendid for baby chicks. Send for sample and literature.

POULTRY



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112 East 8th St. Los Angeles, Cal.

The General says:-

Eggs *are* eggs—when your hens don't lay. A warm chicken house encourages the hens.

Make the roof—and sides too—of

Certain-teed

ROOFING

—The label guarantees it for 15 years—the three biggest mills in the roofing industry are behind that label.

No roofing "tests" can give you that assurance.

Your dealer can furnish *Certain-teed* Roofing in rolls and shingles—made by the General Roofing Mfg. Co., *world's largest roofing manufacturers*, East St. Louis, Ill., Marseilles, Ill., York, Pa.

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Scalefoe

Not only for scale but nearly all insects, worms and bugs that infest plant life. It has been killing them for 15 years, giving the greatest satisfaction without injury, but positive benefit, to the plant. Write for circular with testimonials or better, try it.

Gallon can, 50c;

5-gal. can, freight prepaid, $2.00.

Must be mixed 20 parts water to one Scalefoe before using, making it very cheap. Write for prices in barrels delivered at your freight station.

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West Coast Seed House

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"CRESCENT"-SIX

$1485.00 Cincinnati

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Questions and Answers

THE EDITOR AND STAFF

Questions to be answered in this department should be received at this office one week before reply is expected. Write plainly on one side of the paper and sign full name and address. Unsigned communications receive no attention.

Grafting Over Peach Orchard.

Please state in your paper the best method of changing a thrifty Muir peach orchard to clings or prunes. Trees are five and seven years old. Some advise cutting low, five or six inches from ground, while others advise cutting above forks, letting them sprout and bud in sprout.—Old Subscriber.

The difficulty of grafting over a peach orchard is such that in consideration of the peach being a short-lived tree we do not think we would attempt it. If the work is done by an expert it is barely possible to get grafted trees into bearing quicker than to reset with young trees, but there are so many chances, together with possibility of diseases, that we would prefer that they be reset.

Nightshade.

I send branch from weed growing about here. What is it?—Subscriber.

This is the ordinary nightshade, Solanum nigrum, which infests nearly all sections of the country. We say "infests," although it is practically the same as the wonderberry which was advertised the United States over a few years ago as one of the greatest of Burbank's creations. The plant has the reputation of being poisonous, but the berries are said to make remarkably fine pie when fully ripe. It is also called morelle or stubble berry.

Black Knot on Quince

Is there a spray or any treatment for black knot on quince or apple trees? Our neighbors say it is contagious and advise us to take them out and use wood for fuel.—Subscriber, Orange.

Bordeaux paste applied after the black knot has been chiseled away and clean healthy wood of the tree is exposed is effective. If the knot entirely surrounds the trunk it may not be possible to save the tree. See Prof. Fawcett's article in Cultivator of January 22, 1914, page 102.

Butter Making

I have a three-year-old Jersey heifer with her first calf. She gives about six quarts at a milking, but the cream won't make the butter it should. After I take the butter off the buttermilk is thick with what I thought was butter. After straining it I found it was more like a thick curd or false butter, as some call it. She is perfectly healthy, has a good appetite, takes plenty of salt. What can I do for her? Are apples good for a cow?—Subscriber, Los Gatos.

The milk of a Jersey cow tests on the average about five per cent fat. Twelve quarts per day of two milkings is equal to 24 pounds, or about 1.20 pounds of fat. This should make from one and a quarter to one and a half pounds of butter. Putting it in another way, nine quarts of milk, or 18 pounds, would be required to make a pound of butter. However, this cow's milk may not contain over four per cent of fat, in which case she would make but little more than one pound of butter per day, and it would require about 11 quarts of milk for a pound of butter.

What causes the buttermilk to have the appearance described is difficult to say. The cream may have become too sour, when the casein would be coagulated very much and become hard enough to be strained out like cottage cheese. However, an over souring of the cream should not reduce the quantity of butter or hinder the completeness of churning.

Again the trouble sounds like a difficulty often encountered in the fall of the year, owing to three causes: (1) the cow having been many months in milk; (2) the cow having nothing but dry feed; and (3) the temperature of the cream at churning too low. As to (1) the subscriber does not say how long the cow has been milked since her last calf. If five or six months, or more, the butter fat globules are getting smaller and harder and thus the cream is more difficult to churn than when the cow is fresh. As to (2) the cow at this season probably has no green feed. This fact also tends to a harder butter fat and consequent difficult churning. Both (1) and (2) are partly obviated by churning at a temperature five to ten degrees higher than normally. At this season of the year in Los Gatos, however, the temperature is probably warm enough so that the cream should churn easily. But the nights are cold and may be the cream is cooled too much by time of churning. With all three of the above factors present, butter comes slowly and much is left in the buttermilk.

Give the cow any green feed available. Apples are all right and may be fed as much as a half bushel a day. Also pumpkins, pie melons, squash, green corn stalks, potato peelings, anything "that makes a noise like green.' If no green thing is handy buy a sack of linseed oil meal and feed a pound a day.

Use a thermometer in ripening the cream. Keep the cream as cool as possible until about 24 hours before churning, then warm to 70 degrees and let it sour, stirring occasionally. A few hours before churning let it cool to 62 to 65 degrees. If the cream is sour when skimmed keep it as cold as possible until four or five hours before churning and then warm to 62 to 65 degrees.

These are only suggestions — guesses, as it were, for one cannot prescribe definitely without seeing all the conditions with his own eyes.—L. A.

Analysis of Soils

A subscriber wishes information regarding soil analysis. Would suggest that he write division of chemistry, College of Agriculture, Berkeley, and ask for blanks and method of procedure. The college and the experiment station staff, however, have not found it possible to continue free analysis of soils, and a fee is charged according to the completeness of the analysis desired.

Nematodes

Am sending black eye bean stalks taken from five-acre field. They are troubled with knotty roots and vines soon die. The trouble started some five years ago and has gradually spread. It has increased this year faster than ever. — Subscriber, Anaheim.

These roots were submitted to Prof. H. S. Fawcett and he writes: "These beans appear to be affected by root knot, due to the root knot nematode worm. This disease is usually much worse on the light soils, especially soils that tend to be sandy, than on heavy soils. If the disease is confined to certain patches, as your subscriber suggests, one might use the clean culture method for a couple of years on this particular spot. By clean culture is meant the keeping down of weeds as well as other plants on the particular area so as to starve out the worms. In case the owner wishes to use the land for some purpose, barley or some other grain crop might be planted, although in this case the worms would not be starved out quite so soon. In addition to the root knot a few wireworms were seen in the samples."

Walnut Tree Diseased

I send limb from walnut tree. After apparent vigorous growth the young branches shed leaves and then make a growth of fuzzy leaves, or sometimes one side of the branch will send out new healthy leaves. Have a good crop of nuts with few blighted ones. The entire top of the tree has been cut and grafted with wood from healthy trees. Will the disease appear again after the tree makes new growth?—Subscriber, Anaheim.

On this point Professor Fawcett writes: "In regard to the walnut twig, I am unable to tell definitely just what the trouble might be from the specimen. It might possibly be that the water table was too high and that the roots on the walnut trees were being killed off by being too wet."

Legal

Louis B. Stanton, attorney, 243 Wilcox Building, Los Angeles, will answer legal queries in this department.

Immediate mail replies cannot be given except where fee to Mr. Stanton is paid. When replies are wished in Cultivator address query to 115½ N. Broadway, Los Angeles.

MR. PAYNE RETIRES

We regret very much that Mr. E. L. Payne, who has answered questions in the legal department of the Cultivator for several years, finds that he is unable to continue the work because of ill health. Mr. Payne has built up a most excellent practice in the city of Los Angeles, and perhaps has given to it altogether too close attention. So now he will join more closely the great Cultivator family by becoming a sure-enough farmer himself. He has lands in Antelope Valley in Los Angeles County, part of which are seeded to alfalfa, and in a short time he will be raising hogs and hominy. We are glad to welcome him into the farming class.

The work of Mr. Payne in this department has been most excellent and has benefited many subscribers of the Cultivator. To continue his work we have secured the services of Mr. L. B. Stanton, an attorney who has had many years' practice and one who will endeavor to give to our subscribers the best possible advice along legal lines. We again ask all who have occasion to use this department to state the cases fully and clearly and in as few words as possible. This department cannot give personal advice. Where a subscriber wishes an answer by mail, that is a matter which must be taken up with Mr. Stanton, and a fee will be charged wherever advice is given either in the office or by return mail. We cannot name a definite fee, as is done in the veterinary department, because many questions which might be asked an attorney are of such character as to involve many dollars worth of time to answer, while others are comparatively simple.

* * *

Division of Community Property.

Husband and wife own land bought with community money. The deed to them reads: "an undivided one-half interest to each with the right of survivorship in the survivor." In case of divorce can the wife get any of the husband's one-half? There are no children.—Subscriber, Tulare County.

In case of divorce the power of the court over property of both husband and wife is extensive, the court being enabled to require resort even to the separate property of the husband if under the circumstances of the particular case it considers that such should be done; ordinarily, however, the husband will not be required to give more than one-half of the community property.

Support of Family.

If a man and wife separate and neither have sued for divorce, can the man go away and leave minor children with wife without supporting said children? In case of adultery on part of husband, can wife obtain a divorce and custody of children?

The facts stated in the above case would seem to justify a complaint being laid before the district attorney of your county, as the penal code provides facts such as above stated constitute felony, and upon conviction the husband may be sent either to states prison or required to work upon the county roads and highways for a period not to exceed two years, the county paying to the wife and children the sum of $1.50 per day for such work. In this case under the facts stated there would be little question but that the wife, should she bring action for divorce, could obtain custody of the children.

Disposal of Property.

A man has property when he marries. If there is a divorce or he dies, does wife receive any of the property? If any, what part?—Subscriber, Hanford.

In case of divorce the court has large discretion over the property of both husband and wife and for the support of the wife may require resort to the separate property of the husband. In the case of death of the husband he may dispose of his separate estate by will so that the wife may have none or may have any part which he may desire. In case he should die without a will and leave no issue, his separate estate would go one-half to the surviving wife and the other half to his father, mother, brothers or sisters.

Exchange Contract.

A traded a ranch to B for town property. B had built a shed on an alley adjoining the lots, the alley never having been opened; about two months after transfer of properties was made B removed this shed. Did he have a legal right to do so or is he liable for the value of the shed?—Subscriber, Empire.

It is difficult to state just what rights you would have without seeing the contract of exchange, but if there was no mention of the shed in the contract it would seem B is entitled to remove the same.

Damaged Trees.

Can we claim damages in case of burning of our orange trees on the outside row by the men working on the roads? They poured oil on the grass and set it on fire when there was a strong wind blowing. The grass could have burned without oil and at a time when there was no breeze. We are not allowed to plow along the street row or plant or take out trees on the street row without orders from authorities and it seems to us hard if we have to stand by and see our trees ruined, that we have spent money and energy on. The burning of the Bermuda grass did no good, for it is already out fresh and green.—Subscriber, Pomona.

It has been held many times by our supreme court that a county is not liable for the negligence of its officers or agents, although the men working upon the roads would themselves be liable. It is, however, suggested that you put in a claim to the board of supervisors of your county for the damages sustained, as they have power to do justice in such cases.

County Coroner.

The coroner of this county, when called to hold an inquest over the body of a person who has suddenly died, brings a doctor with him, who, I am informed, charges $75.00 for pronouncing the cause of death, whereas, if he should take a local physician it would only be $10.00 or $15.00 at the most. We would like to know if he holds the right to do this or is it just customary and are we compelled to pay?—Subscriber, Fallbrook.

The coroner of your county is paid a salary by the county for his services and is not entitled to compel you to pay any charge for such a case as you have stated.

Foreclosure.

How long a time is allowed after foreclosure to redeem property? And can one pay it up just the same after foreclosure proceedings, until the time expires? Does one have to pay interest just the same as before?—Subscriber, Fallbrook.

The mortgagor is allowed one year from date of the sale under foreclosure within which to redeem his property. Upon such redemption he is required to pay the amount for which the property was sold, together with interest at the rate of one per cent per month from the date of sale to the day of redemption, regardless of the interest provided for in the mortgage.

Community Property.

In case a man and wife own a home, the wife having two children by her first marriage and the husband, two children by his first marriage, if the man dies can any of the children (they being all of age) take their share before the wife dies? The deed is in the husband's name and he has a homestead filed on the home in his own name. What difference would that make, if any?—Subscriber, Ventura County.

Providing the property owned is community property, upon the death of the husband the wife is entitled to one-half of the community property and one-third of the remaining one-half, the other two-thirds being given share and share alike to the two children of the husband's first marriage. The children of the wife by her first marriage are not entitled to inherit anything. In case it is the separate property of the husband, the same rules apply, except that the wife is not entitled to her one-half of community property. In case of a homestead being filed upon the property, if it is the separate property of the husband, the court may set it apart for the wife and family for a limited period, the title to the property being vested in the heirs of the husband as above stated. If the property is the community property of the husband and wife, she is entitled to have it set apart to her in its entirety, children having no interest therein except as survivors of the wife.

Contract of Sale.

Will you look over the enclosed contract and tell me if I can hold the buyer for two hundred dollars besides the two hundred he forfeited as part-payment. The land was turned over to the buyer and he cut three crops of hay amounting to about the value of the two hundred he paid at the signing of the contract. What rights have I in the contract? He, I understand, is not going to pay balance and will throw the land back on me.—Subscriber, Greenfield.

Your contract has been acknowledged so as to entitle it to be recorded, and if recorded now or hereafter will constitute a cloud upon the title to your property. Under this contract after the 1st of November, 1914, you are entitled to bring action for the balance due upon the property, if he fails to pay said balance. The last clause of the contract is one attempting to provide for a penalty in case the contract is broken, and as equity abhors a forfeiture, the court would probably consider that the $200 therein provided for would refer to the $200 paid at the time of signing the contract, you not being able to show damages greater than the original $200. Your proper procedure would be to bring action upon the contract either for the balance due or to have the contract cancelled and have judgment that the property be returned to you, free and clear of the encumbrance of this contract, unless of course buyer gives you quitclaim deed for the same and you accept such deed.

Forming Irrigation District.

A owns 70 acres of land with a 200-inch well on same. The land in territory surrounding his is being formed into an irrigation district. Will A's land without his signature become part of such an irrigation district? Has the district when formed a right to his 200 inches of water? Can A, after the formation of such an irrigation district, sell the water or his well and divert the water to the outside of the district? If he is included in the district can he do so if he is left out of the irrigation district?—Subscriber, San Fernando.

Many of the questions which you have asked above would require a very extensive search to answer, which would hardly be proper for a medium of this character, but a brief outline of one of the modes of forming an irrigation district and the powers of such district will probably give the bulk of the information sought. A petition is presented to the board of supervisors of the county, which board causes notice of a hearing upon the petition to be posted throughout the proposed district. Any person interested, objecting to the formation of said district, to the extent of the proposed improvement, or to the inclusion of his property, may file a written protest setting forth such objection with the clerk of the board at or before the time set for the hearing of said petition. The board of supervisors thereupon passes upon said protest and has power to exclude property from the district and modify the boundaries or reject the whole proposition. If the protest be denied the board adopts an ordinance for the calling of a special election in the proposed district to decide upon the incurring of indebtedness to defray the expenses of the improvement. An irrigation district is what is known as a quasi corporation and has power to condemn property for its purposes. No man's property can be taken by the state or for any public purpose without due compensation having been first made to him therefore, and it would probably be true that the district as formed would have at least a right to condemn the water arising from the land of A, if it saw fit so to do.

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For Sale—Young registered Berkshire boars and sows; fine strong stock; boars ready for service. Stanislaus Ranch Co., Crows Landing, Calif.

Thoroughbred Duroc Jerseys for sale. Address Box 543 Lomita Rancho, San Jacinto, Cal.

Glenview Poland China—Stock for sale. Chas. R. Hanna, R. F. D. No. 3, Riverside, Cal.

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Grow Sudan Grass — The new forage crop — endures drouth, yields heavy, excellent in feeding value. Plants rogued and seed personally inspected by experiment station officials. The supply this year is limited. Seed one dollar per pound. B. D. Short, Rhome, Tex.

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For Sale—A limited amount of White Tepary beans 15c lb., 100 lb. lots at a reduction. Dr. Geo. P. Clements, Buena Vista Rancho, Riverside, Riverside Co., Cal.

Get Prices, plant now, Luther Burbank and Mediterranean Spineless Cactus Plantations. R. F. D. 35A, San Dimas, Cal.

Thornless Cactus Slabs for sale at 5 to 15 cents each. Chas. R. Hanna, R. D. No. 3, Riverside Cal.

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Local representatives to write orders for Roeding "True-Trees." Highly satisfactory selling plans and commission offered ranchers, fruit growers, real estate men or salesmen for a part of their time this Fall and Winter. Write at once for full particulars.
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Farms Wanted—We have direct buyers. Don't pay commissions. Write describing property, naming lowest price. We help buyers locate desirable property Free. American Investment Association, 12 Palace Bldg., Minneapolis, Minn.

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Wanted—Pullets—All ages and varieties, and laying hens for spot cash. Write us what you have, giving number, age and average weight. Pioneer Hatchery, 112 East 8th, Los Angeles, Cal.

Wanted—To lease 25 to 100 acres of good land near coast, preferably with option to buy. 318 W. 62nd St., Los Angeles.

RABBITS

For Sale—New Zealand rabbits, the best meat producers. Mature does and bucks, $2.50 to $5.00 each. A grand lot of fine, red, half-grown youngsters. One buck and three does, unrelated, $5.00. Your chance to get ta start of this splendid strain at small cost. Shipped anywhere. Standard Rabbitry, 1404 French St., Santa Ana, Cal.

New Zealand Reds—Prize stock, bucks and does; also thoroughbred Barred Rock eggs for hatching Mrs. C. Richey, R. D. No. 8, Box 557, Los Angeles Cal.

New Zealand Reds—Scored and sold on merit. Investigate. Our catalog is free. Caldwell Bros., Los Angeles, Cal. Box 613.

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RANCH AND POTATO MACHINERY
New 1000 gal. galvanized tanks, $19.50; 2000, $29.50; 8 ft. windmills, $19.50; 10 ft., $29.50; 12 ft. $45.00.
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La Dow baler, $95.00; Whitman Power baler, Southwick Power baler, binders, headers.
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Potato diggers, planters, cutters, cultivators, harrows, plows, Holt tractor, sprayers, sundries.
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Bankrupt sale new stocks and dies half price, gears, large pipe fittings, pulleys, belt.
Demmitt Co., upstairs, 120 N. Main, Los Angeles.

We have pumps, motors and engines of all sizes and for all conditions, which we will sell or rent. If you want a complete plant or any part, write us your needs and get our prices. Can give you special low price on engine and automobile oil, also belting. Machinery & Motor Exchange, 733-735 San Fernando street, 732-734 New High street, Los Angeles, Cal. Main 6382.

For Sale—Used and new gas engines, 2 H.p. up, rebuilt and fitted with modern equipment. 22 years' experience enables us to repair and rebuild gas engines correctly. Get our prices. Lloyd, 806 N. Main, Los Angeles.

For Sale—American Bean Thresher; 4 h. p. engine, used one season. Price, $60.00 f. o. b. Santa Rosa. O. L. Triggs, Santa Rosa, R. D. 7.

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Special inducements; government land, railways, free schools; cheap irrigation; 31 years to pay for farms adapted to alfalfa, corn, grains, fruit, etc.; climate like California, ample markets; reduced passages; special excursion next November. Free particulars from F. T. A. FRICKE, Government Representative from Victoria, 687 Market St., San Francisco, Cal., Box X.

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How to Make Money—Mrs. A. Basley's latest Poultry Book is without exception the best ever written. The secret of how to raise every turkey hatched and the "Basley Formulas," now published for the first time, are worth many times the price of the book. The "Western Poultry Book" is a practical book by a practical woman. Price $1. Order from Cultivator Publishing Co.

Poultry Wanted—We pay the highest market price for all the local poultry we can get, no matter how large the quantity; also fresh ranch eggs. We remit immediately. National Poultry Co., successors to Allaway & Layton Co., 607 E. Third St., Los Angeles, Cal.

Baby Chicks—After Oct. 1st., White Minorcas, a very popular breed for all purposes. Golden Buff Leghorns—are fowls of beauty as well as heavy layers—all fall and winter chicks, $15.00 per 100; quality guaranteed. Sand Ridge Hatchery, Kerman, Cal.

Barred Rock Cockerels (Hawkins' Royal Blue Strain) ready for fall mating. All the popular breeds of baby chicks every week after Aug. 15th. Order early and avoid the rush. Enoch Crews, R. 1, Santa Cruz, Cal.

Baby Chicks—White Leghorns, McFarland strain, Barred Rocks and R. I. Reds. Ship anywhere and guarantee safe arrival. J. W. Lyon, R. D. 1, Box 170, Gardena, Cal.

Barred Plymouth Rocks — "None better." Special prices for May and June. Write for 'em. O. H. Vodden, Los Gatos, Cal.

TREES

For Sale—One and two-year-old Washington Navels and Valencia Orange Trees. Eureka Lemons and Marsh seedless grapefruit, for Spring 1914 delivery. Write for prices, or call and examine stock at Morris Citrus Nurseries, Cor. Juanita and Valley Center, R. F. D., Box 34, San Dimas, Cal.

For Sale—50,000 Sour Orange seed bed stock, finest quality, or will let to responsible party on percentage basis; also 2000 A1 late Valencias, two years old next spring, or might exchange for Washington navels. H. H. Eshelman, Soldiers' Home, Cal.

Walnut Trees—Eureka and El Monte varieties a speciality, also Franquette and Plancentia. Write for prices and description of stock. Personal inspection invited. Eureka Walnut Nursery, Montebello, Cal.

The 1200-Acre Nursery, growers of 1500 varieties of trees and plants. OREGON NURSERY CO., Orenco, Oregon. Sales office, 522 Chamber Commerce, Los Angeles, Cal.

000 Avocado Seedlings—Pots, also can furnish nice plants, bare root, at low price. A. A. Quint, R. D. No. 2, Pasadena, Cal.

For Sale—Eureka Walnut Trees, budded on Native Black Walnuts. Choice stock. Order immediately. Don't delay. Wm. Holve, Fullerton, Cal.

Citrus Nurseries, Murphy Oil Company, East Whittier, California. Selected stock for sale; inspection invited.

You Future Nurserymen—Write for prices on special stocks of plants to start business with. Ballou's Nursery, Pasadena, Cal.

Budded Citrus Trees and seedlings at fair prices. Will take auto or land. Butler's Morning Side Nursery, P. O. Box 145, Lamanda Park, Cal.

MISCELLANEOUS.

Free for Six Months—My special offer to introduce my magazine "INVESTING FOR PROFIT." It is worth $10 a copy to anyone who has been getting poorer while the rich, richer. It demonstrates the REAL earning power of money, and shows how anyone, no matter how poor, CAN acquire riches. INVESTING FOR PROFIT is the only progressive financial journal published. It shows how $100 grows to $2200. Write NOW and I'll send it six months free. H. L. Barber, 430, 28 W. Jackson Blvd., Chicago.

ORCHARD HEATERS
I have 1500 unused No. 1 Troutman which will close out at 15 cents each, and about 2000 (used one season and exchanged for larger size) at price of 10 cents each. W. H. Fowler, Ontario, Cal.

"Smith's Pay the Freight"—To reduce the high cost of living, send for our Wholesale to Consumer Catalogue. Smith's Cash Store, 112 Clay St., San Francisco.

State, Indian and government land. Write for booklet. The California State Land Information Bureau, Sacramento.

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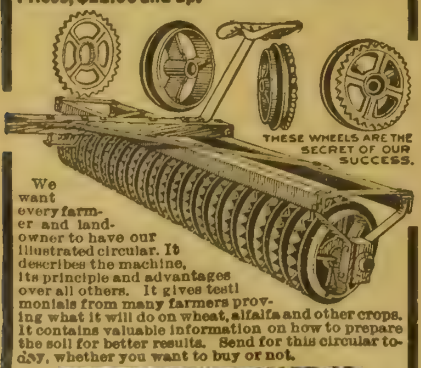
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All our pipe and casing has newly cut threads with new couplings attached and dipped in asphaltum. Guaranteed good as new. Prompt delivery on carloads or less. Small orders receive same attention as large ones. All sizes of pipe, also fittings and valves.

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169 Eleventh Street, San Francisco

Household Department

FALL

Oh, apple time and cider time,
  And time of pumpkin pies,
Of stubblefields and naked trees,
  Of clear and cloudless skies;
Of babies jacketed and warm
  With dancing curls and feet
And red, red cheeks and glinting eyes
  In every nook and street.

And harvest moon and mockbird songs,
  And fieldlark's roundelay;
And goldenrod and heather-bloom,
  And thistledown at play;
And amber-colored morns and eves,
  And hazy nights and still;
And the sad call at eventide
  Of lonesome whippoorwill.

Migrating birds have all gone south
  But still the copses ring,
And still the mocking birds sing loud
  The songs they used to sing;
And the late morning glories bloom,
  And roses everywhere
Their perfumes and their petals fling
  Like broidered scarfs and rare.

The hazy time, the lazy time,
  The coaxy time of year;
Of dusty ways and short'ning days
  And nights of autumn cheer;
Take down the fiddle and the bow
  And wake the old-time tune
To autumn's cheer and winter near,
  And the round harvest moon.

—The Houston Post.

A GIRL AGAIN

By Florence V. Mead

Little Mrs. Judson kissed and hugged each of her three children three times round, making nine tearful good-bys. She solemnly adjured her husband to write each day a detailed account of the family health and doings, and he promised acquiescence as cheerfully as if he had not made the same promise five times before.

The more familiar scenes once left behind, Mrs. Judson's mind leaped forward to the tenth reunion she was on her way to attend at her beloved alma mater. Some of the girls—for "girls" they would always be to her—she hadn't seen since graduation, and her lips curved with smiles in anticipation of the delightful time they were sure to have together.

"Marion Bixby!" exclaimed a voice, as she stepped into College Hall, and she felt herself clasped in the embraces of three of her classmates. One of them held her off at arm's length and looked at her with mock severity.

"Who would ever dream, Marion Bixby, to see you so youthful and fresh, that you are Mrs. Robert F. Judson, and have three kiddies at home! I refuse to believe it!"

"You needn't, Clara. I can hardly realize it myself, now that I am back in college," and little Mrs. Judson laughed happily.

But as they passed the alumnae postoffice, on their way to the registrar's desk, she looked involuntarily into one of its lettered pigeon-holes, and confided to Frances Hale Severance, "I should like to hear from Rob tonight, though, and learn if the children cried for me when Maggie put them to bed, and if Rob remembered Junior's teddy-bear."

The following morning she went over for her mail. There might be even three letters, for the twins had promised to write. She could picture their facial contortions, the little fingers gripping unwieldy pencils that traced strange characters which she alone could decipher. But to her amazement, the pigeon-hole in which she peered so eagerly was empty. She even thrust an incredulous hand into its yawning emptiness. However, she reflected consolingly, letters would undoubtedly arrive on the twelve-o'clock train.

She was promptly on hand for the next distribution of mail, missing thereby an important class-meeting, but again her pigeonhole yielded no spoils. The second day brought no better results, and when the third dawned and waned with no letter to its credit, little Mrs. Judson became emphatically nervous.

She composed a fifteen-word telegram.

"There," she said, "I shall send that 'collect,' and I imagine it will bring Robert to his senses. He has spoiled my reunion already by his thoughtlessness."

As she went out of the door, she met Clara Folsom coming in, her arms loaded with letters and newspapers.

"Here," exclaimed Clara, "here is your mail, Marion Bixby—four letters from your husband and two from the twins, judging from the chirography, not to mention numberless letters and papers from other sources!"

Mrs. Judson stared at her in stupefaction. "Where did you find them?" she gasped.

"Where any reasonable mortal would expect to find them!" retorted Clara, severely. "In the pigeonhole marked J. You have been looking all the time under B."

A smile of comprehension dawned in the eyes of Marian Bixby Judson. "I—I forgot I was married!" she murmured, sheepishly.

Then she tore up the telegram and sat down happily in the midst of her letters.—Youth's Companion.

PRIZES FOR OCTOBER CONTEST

The Hallowe'en entertainment has been suggested as the subject for our next prize contest. Articles will be published in the Cultivator of October 15 and should be in this office by Thursday, October 8.

Two Dollars.

Two dollars in cash will be given for best short article describing a child's Hallowe'en party, a dinner, ride or any other form of Hallowe'en entertainment, giving of course that most interesting part of any party, "the eats."

One Dollar.

Read " A Good Way to Use Walnuts" in this department. Then send your favorite recipe using walnuts. For the best will be given one dollar in cash.

Cultivator for Six Months.

To all, not prize winners, whose articles or recipes are published, will be given six months' subscription to the California Cultivator. Remember all suggestions should be mailed to California Cultivator, Los Angeles, by October 8.

Send Suggestions.

Both subjects for the October contest were suggested by subscribers. Now what shall we have in November? With your article or recipe send in your suggestion.

Photo Contest Next.

On October 1st the prize winners in the photograph contest will be printed. Be sure to read "Prize Photos" on editorial page of this issue. Did you see the photos in the Cultivator of September 3? We want yours for the October number.

Conveniences for the Auto

MAKING A PULLMAN

First Prize Suggestion

By D. F. J. Bold, Whittier

The following represents the practical working out of several experiments at making a "Pullman" out of a Ford touring car.

The plan in general utilizes both seat cushions, supporting them on a frame work flush with the backs of both front and rear seats. This provides a continuous and very satisfactory spring bed as far as it goes, but it is only five feet long. Extra length is gained by utilizing a piece of canvas fastened at the back of the front seat and carried forward for about two feet. This piece is stiffened by two light transverse strips of board sewed into the canvas. Through the ends of these boards pass guys for lashing the canvas to the front bows of the auto top. With such a bed, a few blankets, with the curtains drawn down, camping out in rain or cold is real fun.

The frame work for supporting the cushions consists of uprights:

A. Two pieces 1x3x14½ inches.

B. Two pieces 1x3x24 inches. All four of these provided with a 1x3 inch slot in one end to accommodate the "rafters."

C. Two pieces 1x3x37 inches. (The rafters.)

D. Two quarter-inch boards, 10x36 inches.

Uprights A stand on wooden frame work of rear seat and rest against back cushions.

Uprights B stand on floor of car and rest against metal back of front seat behind robe rail.

Rafters C run from A to B.

Roof boards D lie across rafters.

The piece of canvas is anchored to front seat thus: A hem one and one-half inches wide is made across the end and through this hem is passed one inch strip of board a yard long, after fashion of strip at bottom of window curtain. This edge of the canvas is passed over the top of the front seat and the hemmed edge (enclosing board strip) is caught under the projecting metal ledge of the seat. When the two cushions are placed on supports the canvas is caught securely and evenly. Nothing now remains but to tighten up the guy ropes that suspend the canvas from the top bows. A few blankets and lo! the berth is made up.

When on the road the roof boards D are carried under the seat cushions. The uprights and rafters are wrapped in the canvas, making a neat package that can be stowed away in tonneau. The package weighs about six pounds.

A CHAIR FOR BABY

Second Prize Suggestion.

By Mrs. George H. Pettengill, Los Angeles.

I fear my auto suggestion will sound like a "paid advertisement" but think the end justifies the means, and what mother will not agree with me who has to hold the baby on her lap whenever she rides?

The suggestion is to buy a folding high chair.

Two rubber covered hooks clip over the top of the auto door, which cannot swing open while the seat is in place; from these hooks is suspended a small canvas covered seat capable of sustaining 100 pounds. The baby is strapped in, well bundled up and enjoys the ride as much as anyone. So does the mother!

The seat may be folded together in almost as small a parcel as a newspaper, and is indespensable when you are dining out, as it fastens over the back of any chair, thus making a high chair for baby.

If you tell the manufacturers you wish to use it in the auto, and tell them the make of your machine they will send the extra auto hooks gratis.

AUTO POCKETS FOR A TRIP

By Mrs. C. G. Ramsey, Orange.

Friends of mine were going east in their auto. I asked where they would put clothes enough to do the three children; the mother was sure she didn't know. I told her I'd fit the car out with a lot of handy pockets if she would get two yards of black oil cloth and some black-headed tacks. I cut two strips about 16 inches long from across one end, hemmed one long edge and turned it up to within three inches of the other edge, sewed it at each end, also three times at equal distance, making four pockets, notched the upper edge and worked buttonholes, using a shoe button to fasten each pocket, sewed black tape at upper corners and between, and tied one to each side of car where curtains roll up. Made two smaller ones for each side of the back window, one for the gowns, and the other for comb, brush, large hand glass, and powder can. Tied these so they could be taken down each night and hung in their tent. Also cut a pocket to fit each door and tacked them on. They were delighted with so much extra room—said I "ought to get a patent on my invention."

FOR A QUICK LUNCH

By Mrs. Robert Porter, Roseville.

We keep a little tin box under the rear seat. It is just large enough to hold six small sized paper plates, six napkins, and usually we have in it a box of nabiscos or zuzus or something similar. When we come home the box is refilled from the house supply and returned to its place. A tin tobacco box full of sandwiches and the thermos bottle with hot coffee can be added at very short notice, and ice cream bought on the way.

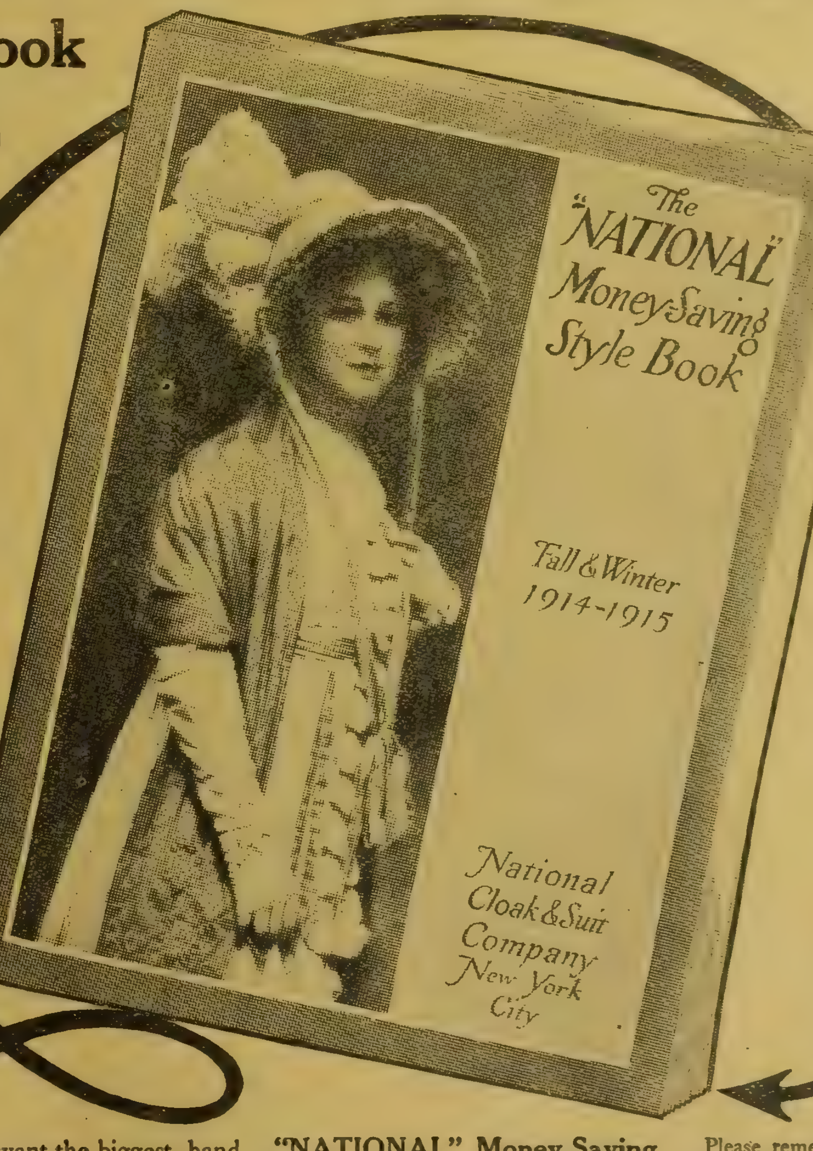
A GOOD WAY TO USE WALNUTS

A Whittier subscriber tells us how to utilize walnut meats discolored by last September's day of scorching heat. These meats though sound and sweet have been difficult to market on account of their appearance. They can be purchased as cracked meats at a price which makes them very attractive to the economical housekeeper who also sees in them possibilities of concocting new "meat" loaves, salads, etc.

Walnut Loaf.

Grind nuts through food chopper three times to make a walnut meal. Mix one third part of this walnut meal with two-thirds parts of Hamburg steak, also ground. Form into loaf and bake.

Probably most cooks would prefer to modify this meat and nut mixture by adding bread crumbs, cracker crumbs, corn meal, etc., perhaps with addition of egg, as it is rather rich for the ordinary digestion. But the suggestion is a valuable one and may lead to other culinary discoveries.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Furs	1.95 to 16.98
Ladies' Shoes	.85 to 3 98
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House Dresses and Kimonos	.69 to 4.98
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Suits for Misses and Small Women	7.98 to 15.98
Boys' and Young Men's Clothing	2.49 to 12.98
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Junior Misses' Coats	3 98 to 9.98
Junior Misses' Suits	6.98 to 10.98
Children's Dresses	.50 to 6.98
Children's Coats	2.98 to 6.98
Children's, Misses' and Infants' Shoes	.29 to 2 95
Infants' Dresses and Coats	.29 to 5.75

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Please send me, Free, my copy of the "NATIONAL" Money-Saving Fall Style Book.

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San Francisco--Los Angeles Produce Markets

Los Angeles Market

LOS ANGELES, Sept. 16, 1914.

The prices given below, except where otherwise noted, are those made by wholesale or commission houses to retailers, and are intended to give producers the range of the market rather than an indication of prices which they will secure. Jobbers' quotations to producers are not given.

BUTTER

Butter has dropped two cents since last week on upper grades. Receipts yesterday 55,780 pounds.

Prices to trade 4 cents above following quotations:

Creamery Extras	27
Firsts	24
Country	22
Ladle	21

CHEESE

Prices to trade 1 and 2 cents higher:

California Fresh	14½@15
Domestic Swiss	19@20
Imported Swiss	35@37
Oregon Triplets	18@18½

EGGS AND POULTRY

Notwithstanding the lowest receipts of the year quotations on practically all grades have dropped a cent but market is very firm.

Prices to trade 3 cents higher than following quotations:

Fresh ranch, case counts	35
Candled	37@38
Northern Case Count	37½
Petaluma-Santa Rosa	38½

Prices to producers:

Hens, lb.	14@19
Roosters, old	9
Broilers, lb.	20
Fryers	18
Roasters, lb.	17
Turkeys	18@26
Ducks	12
Geese	14
Squabs, doz.	2.00

LIVE STOCK

The following quotations are f. o. b. Los Angeles on all stock:

Hogs, 175 to 200 lbs., per cwt.	9.50
Prime Steers	7¼@7½
Heifers	6¼@6½
Calves, lb.	8½
Sheep—	
Ewes, head	4.00
Wethers	4.25@5.00
Lambs, head	4.50@4.75

POTATOES

Wholesale selling price:

Sweets, sack	1.75@2.00
Northern Burbanks, cwt.	1.40@1.45
Shimas	1.50@1.53
Lompocs	2.00@2.10

ONIONS

Wholesale selling price:

Australian Brown, cwt.	90@1.00
Silverskins, cwt.	1.75@1.90
Yellow Danvers, sack	90@1.00
Garlic	16@17

VEGETABLES

Wholesale selling price:

Artichokes, Northern, doz.	50@1.00
Beets, doz.	30@35
Beans, String	5@6
Lima	3½@4
Cabbage	65@70
Carrots, doz.	30@35
Cauliflower, doz.	75@85
Celery, doz.	40@50
Corn, Sugar, box	60@65
Field corn, sack	1.50@1.60
Cucumbers, lug	35@45
Pickling, lug	1.10@1.35
Egg Plant	3@3½
Escarole, doz.	40
Horseradish, lb.	12@13
Leeks, doz.	35@40
Lettuce, crate	1.00@1.25
Mint, doz.	35@40
Okra, lb.	6-7
Onions, Green, doz. bunches	15@20
Oyster Plant	25@30
Parsnips, doz.	25@30
Peas, lb.	5@8
Peppers—	
Bell, lb.	3@4
Chili, lb.	3@4
Radish, doz.	20@25
Rhubarb, box	80@1.35
Spinach, doz.	20
Squash—	
Summer, lug	30@35
Crookneck	25@35
Hubbard, lb.	2½@3
Turnips	35@40
Tomatoes, lug	40@60

FRESH FRUIT

Wholesale selling price:

Apples—	
Alexanders	1.25@1.35
Banana Apples	1.00@1.15
Bellflowers	70@90
Jonathans	1.25@1.35
King Davids	1.10@1.25
Crabapples	90@1.00
Bananas	3½@4
Berries—	
Strawberries, basket	3@5
Raspberries, basket	8@9
Blackberries, basket	3@4
Cantaloupes—	
Locals, small	1.10@1.25
Locals, large	1.50@1.85
Casabas, doz.	90@1.10
Figs, 2-layer box	80@1.00
Grapes—	
Cornichon	90@1.00
Concord	1.25@1.35
Malagas, crate	75@85
Muscatels, lug	60@75
Tokays, lug	90@1.00
Nectarines, lug	1.10@1.25
Peaches, lug	60@1.00
Pears, Bartlett, lug	1.20@1.25
Seckel	85@1.00
Pineapples, lb.	5@6
Plums, lug	1.25@1.40
Quinces	45@60
Watermelons, lb.	1@1½

CITRUS FRUIT

Wholesale selling price:

Lemons	4.25@4.35
Grapefruit, Seedless	2.25@2.50
Valencias	1.75@2.50
Limes, basket	1.50

DRIED FRUITS

Wholesale prices to retailers are:

Evaporated Apples, Fancy., lb. boxes	6½@12½
Apricots	9@11
Nectarines	12½
Peaches	6@7½
Pears	8@12
Prunes	5¾@17
Plums	10

NUTS

Prices named by California Walnut Growers' Association are:

No. 1	17½
Budded Walnuts	21
No. 1 Soft Shell Walnuts	16
No. 1 Hard Shell Walnuts	15½
No. Twos	11½

Prices fixed by California Almond Growers' Exchange, f. o. b. California.

Almonds—	
Nonpareil	21
I X L	20
N P U	19
Drake's Thinshelled	15
Pecans	17
Peanuts—	
California, Raw	6
Japan	7½
Eastern	7½
Rice Corn	5.00@5.25

HONEY

Wholesale selling price:

Comb, Fancy, Water White	15
White	13
Light Amber	6½
Extr. Water White	8
White	7½
Light Amber	7
Beeswax	32

BEANS

Wholesale selling price:

Producer's price not far from one dollar under these quotations:

Limas	7.75@8.00
Lady Washington	5.60@5.7b
Black Eyes	8.00
Pinks	5.50@5.60
Lentils	8.00@10.00
Small White	6.35@6.65
Garbanzos	8.00@8.50

RICE

Wholesale selling price:

California	5.00
Broken	4.00

HAY

Buying prices f. o. b. cars Los Angeles:

Barley	10.00@11.00
Wheat Hay	10.00@11.00
Tame Oat	11.00@13.00
Alfalfa	9.00@11.00

GRAIN

Wholesale selling prices f. o. b. Los Angeles:

Corn, Yellow	2.20
Corn, White	2.30
Wheat	2.00
Oats, Red	2.35
Oats, White	1.65
Kaffir Corn	1.90
Millet	3.75
Popcorn	4.75@5.00
Egyptian Corn	2.30
Barley Seed	1.45
Milo Maize	2.00
Cal. Seed Oats	2.25
Sunflower Seed	5.25@5.35

FEED STUFF

Wholesale selling prices f. o. b. Los Angeles:

Bran, Heavy	1.7b
Alfalfa Meal	1.05
Alfalfa Syrup, per cwt.	1.05
Beef Scraps	3.00@3.10
Beet Pulp	1.25
Cracked Corn, cwt.	2.20
Cracked Wheat, cwt.	2.15
Cotton Seed Meal	1.85
Bloodmeal	3.60@3.70
Bone Meal	2.00@2.10
Bone Green	1.95@2.05
Charcoal	1.90@2.00
Oil Cake Meal	2.05
Fish Meal	3.15@3.25
Rolled Oats	1.70
Rolled Barley	1.30
Middlings	2.00
Oat and Wheat Middlings	1.55

San Francisco Market

SAN FRANCISCO, Sept. 15, 1914.

The prices given below, except where otherwise noted, are those made by wholesale or commission houses to retailers, and are intended to give producers the range of the market rather than an indication of prices which they will secure. Jobbers' quotations to producers are not given.

BUTTER

There is little demand for any grade of butter but extras, which are selling two cents below last week's quotations.

Prices to trade 4 cents above following quotations:

Extras	30
Prime Firsts	29
Firsts	27
Seconds	24

CHEESE

Wholesaler to retailer.

California Y. American	14½@15
California Flats	10½@14½
Cheddar	20
Oregon Twins	15

EGGS AND POULTRY

The egg market is a little better, the demand being good for first grades.

Prices to trade 3 cents higher than following quotations:

Extras	39
Select Pullets	34½
Storage, extra	30

Price to producer:

Hens	15@18
Fryers	20@21
Roosters, old	12
Roosters, young	20@22
Broilers	19@21
Belgian Hares, lb.	10@11

LIVE STOCK

San Francisco prices, gross weight:

Steers	4@7
Cows and Heifers	3@6¼
Calves, lb., live weight	6@8½
Hogs	9@10¼
Wethers	5@5½
Ewes	4½@5
Milk Lambs	6½@6¾

POTATOES

Wholesale selling price:

Delta, Burbanks	70@1.00
Sweets, cwt.	1.40@1.50

ONIONS

Wholesale selling price:

Yellow, sack	40@50
Garlic, new	10@12½

VEGETABLES

Wholesale selling price:

Beans—	
Limas, lb.	2@3
Wax, lb.	1@3
Strings	1@3
Cabbage, cwt.	1.00@1.25
Carrots, sack	35@50
Celery, doz.	25@30
Corn, Green, sack	50@1.50
Cucumbers, lug	20@30
Egg Plant, lug	25@35
Peas, lb.	3@5
Peppers—	
Bell, lug	25@35
Chili, lug	30@40
Rhubarb, box	60@1.00
Tomatoes, lug	30@60

FRESH FRUIT

Wholesale selling price:

Apples—	
Gravensteins	50@1.00
Bellflowers	75@90
Crabapples	40@85
Bananas, Hawaiian, bunch	1.25@1.75
Cantaloupes, crate	50@60
Delta, lug	15@35
Casabas	50@75
Figs—	
Black, double layer	40@60
Black, single layer	20@25
White, box, single layer	20@30
Grapes—	
Black	25@50
Tokay	50@65
Seedless	40@50
Malagas	40@60
Muscats	50@65
Huckleberries, lb.	6@10
Nectarines, crate	75@1.00
Peaches, lugs	25@50
Pears, box	65@1.00
Bartletts	1.00@1.35
Canners, ton	17.00@22.00
Plums, crate	75@1.25
Lug	75@1.25
Pineapples, Hawaiian, doz.	1.50@2.00
Prunes, crate	60@1.00
Quinces, box	75@1.00
Blackberries, chest	4.00@6.00
Raspberries, chest	3.00@6.00
Strawberries, chest	2.00@3.50
Watermelons, doz.	75@1.50

CITRUS FRUIT

Wholesale selling price:

Grapefruit, Seedless	1.00@2.50
Lemons	2.50@5.50
Lemonettes	5.00@6.50
Valencias	1.25@2.25
Tangerines	75@1.25

DRIED FRUITS

Wholesale prices are:

Prunes—1914 crop, bulk basis, 30-40s, 6½c@6¾c; 40-50s, 6@6¼c; 50-60s, 5½@5¾c; 60-70s, 5½@5¾c; 70-80s, 5¼@5½c; 80-90s, 5¼@5½c; 90-100s, 5¼@5½c. 1913 crop worth practically same prices. The above are for Santa Clara Prunes, outside sections about ¼c.

Other Fruits 50-lb. boxes—	Standard.	Ch.	Extra Ch.	Fcy.
Evaporated Apples	5¾c	6 c	7 c	
Apricots	6½c	7½c	8 c	8¾c
Peaches	3½c	4 c	4¼c	5 c
Pears	7 c	8 c	9 c	10 c

RAISINS

RAISINS—The following prices are f. o. b. Fresno, as given out by the Associated Raisin Company for September shipment, and with the exception of bulk seeded and ungraded Muscatels are guaranteed against a decline to December 31st: Fancy seeded, 16-oz., 6½c; 12-oz., 5½c; bulk, 6c; choice seeded, 16-oz., 6⅛c; 12-oz., 5c; bulk, 5½c; loose Muscatels, 2-crown, 5c; 3-crown, 5¼c; 4-crown, 5¼c; ungraded, 5c; 1914 crop—Thompson Seedless, No. 1, pkgs., 7⅜c; 12-oz., 6c; 50-lb. cs., 6¼c; Sultanas, 50-lb. cs., 5½c; bulk, layers, 50-lb. bxs., $2.75; in 20-lb. bxs. 6-crown, $2.75; 5-crown, $2.25; 4-crown, $1.60; 3-crown, $1.30; 5-lb. bxs. on all bulk stock, 50c additional; 10-lb. bxs., 25c additional. Car tons—Clusters, 20 to a case, No. 1, $1.70; No. 2, $2.10; No. 5, 4 to a case, $2.25. Local representatives of the association are asking about ¼c higher, while several of the larger packers are quoting ½c under these figures.

NUTS

ALMONDS—Prices fixed by Almond Growers' Exchange to the trade, f. o. b. California:

Nonpareil	21
I X L	20
Ne Plus Ultra	19
Drakes	16

Wholesale selling price:

Peanuts—	
Unpolished	5@8
Polished	6@6½
Japanese, Shelled	6¼@6¾
Italian Chestnuts	6½@7

BEANS

Wholesale selling price:

Limas	7.50
Pink	4.50@4.75
Black Eyes	6.25@6.50
Cranberry	5.50@5.75
Small White	5.50@6.00
Garbanzos	5.00@5.50
Large White	4.75@5.00
Bayou	5.00@5.50
Manchurian Speckled Bayous	4.40@4.60
Manchurian Butters	4.60@4.80
Manchurian Cranberry	4.00@4.25
Red Mexican	5.25
Horse Beans	1.90@2.00
Mexican Bayou	5.00@5.50

HONEY

Comb, Water White	14@16
Amber	10@12
Dark	7@10
Extracted White	7@9
Light Amber	6½
Dark	4@5½
Beeswax	27@32

HOPS

1914

Sacramento Valley	16½@17½
Sonoma-Mendocino	18@20
Oregon Clusters	18
1914 Contracts	15@16

HAY

Under date of September 12 Scott, Magner & Miller say:

Receipts for the past week were 3932 tons. This is quite a falling off from the previous week of 5060 tons. At the same time the market has been so heavily stocked that even with the decrease of receipts it has been extremely difficult to move the hay and many cars have had to be left on demurrage.

Fancy hay sells readily and all other grades are dull and inactive. Alfalfa demand is light with receipts growing heavier.

Fancy Wheat Hay, lt. bales	11.00@12.00
No. 1 Wheat or Wheat and Oat	8.00@9.00
No. 2 Wheat or Wheat and Oat	6.00@7.50
Choice Tame Oat	10.00@11.00
Other Tame Oat	7.00@9.00
Barley	6.00@8.00
Wild Oat	6.00@8.00
Alfalfa	6.00@9.00
Stock Hay	4.50@5.00
Straw, new	30@45

GRAIN

Wheat, Cal. Club	1.75@1.77½
Corn, Eastern Yellow, blk.	1.92½@1.93¾

WEATHER CONDITIONS

For week ending Saturday, Sept. 12, 1914.

Report from the various stations of the U. S. Weather Bureau, by Geo. H. Wilson, director, San Francisco:

	Rainfall Data			Temperature Data.	
	Past Week.	Seasonal to Date.	Normal to Date.	Maximum.	Minimum.
Eureka	.22	.24	.49	62	46
Red Bluff	.00	T	.14	96	52
Sacramento	.00	.00	.09	94	50
San Francisco	T	.02	.01	[illegible]	52
San Jose	.00	.00	.10	94	42
Fresno	.00	T	.00	98	54
Independence	.00	.16	.00	88	48
San Luis Obispo	.00	T	.06	90	50
Los Angeles	.00	.01	.00	78	54
San Diego	.00	.00	.00	70	58

Barley, Feed	1.12½@1.17½
Oats, White	1.65
Millet	2¾@3
Flax	4½@5
Rye	1.55@1.60
Oats, Red	1.40@1.50
Oats, Black	1.75@2.25
Sunflower	5@5½

FEED STUFF

Alfalfa Meal, car lots	11.50@12.50
Bran, ton	29.00@30.00
Feed Cornmeal, ton	43.00
Cracked Corn	43.00
Rolled Barley, ton	25.00@26.00
Rolled Oats, ton	37.00@37.50
Middlings	32.00@34.00
Shorts	30.00@31.00
Oilcake Meal	32.00@33.50
Cocoanut Oilcake Meal	25.00@26.00

Citrus Fruit Market

Los Angeles, Sept. 16, 1914.

The orange market is a little better this week, somewhat improved all along the line. The great surplus of deciduous fruit is past its high water mark, and oranges are receiving a little more attention. Prices show some improvement, being at the present time about 15 cents per box higher than last week. No extremely high prices in prospect, but the orange condition is considered very satisfactory considering the quantity to go forward. After this week there will be about 2300 cars to go.

The lemon market is dead. There is practically no demand. Weather in the East has been around 60 degrees for the past month and people are not using many lemons. The exorbitantly high prices which prevailed at the outbreak of the European war have also helped in keeping the market down. Foreigns have been coming in great quantities and have sold at ruinously low prices. Last week in New Orleans 21,000 boxes of foreigns sold at an average per box of $1.40, delivered. In New York, 13,000 boxes of foreigns sold at $1.95. In Philadelphia, 11,000 boxes sold at an average price of $1.75 per box.

Shipments.

Shipments of oranges from Southern California to date since November 1, 1913, 36,225 cars; lemons, 13,032; total, 49,257; to same date last season, oranges, 13,032; lemons, 2,105; total, 15,137; total of all citrus fruits two years ago this date, 34,089.

NEW YORK, Monday, Sept. 14.—Twenty-five cars Valencias, one Rialto Lates, one lemon sold. Market firm on all small sizes Valencias, easier on larger sizes. Weather fair.

VALENCIAS—	Avge.
Aurora, Fy., Amer. F. Dis.	$2.65
Sappho, Amer F. Dis.	1.95
Glendora Heights, Xf., A.C.G. Ex.	3.80
Glendora Heights, Foothill	2.75
Whittier, S.T. Ex.	2.80
Rooster, O.R. Ex.	2.95
Mohawk, O.R. Ex.	2.75
Cardinal, O.R. Ex.	2.35
Searchlight, O.R. Ex.	2.55
Kenilworth, A.H., Riv.	2.80
Peasant, A.H., Riv.	2.50
Dandy, A. H., Riv.	2.05
Geo. Washington, O.R., Tustin	2.70
Martha Washington, O.R., Tustin.	2.30
Pinnacle, O.K., Upland	2.75
Majesty, O.K. Ex.	2.15
Carmencita, S. T. Ex.	2.45
Colombo, S. T. Ex.	2.20
Daisy, Covina Ex.	2.45
Gladiola, Covina Ex.	2.15
Duquesne, A.C.G. Ex.	3.25
Fort Pitt, A.C.G. Ex.	2.65
Old Mill, A.C.G. Ex.	2.05
Airship, F.C., Fillmore	2.20
Cycle, F.C., Fillmore	1.35
Rossmoyne Groves, E.M. Ross	2.25
Girl, S.T., Rossmoyne	1.90
Glendora Heights, Sd., A.C.G.	2.45
Green Label	2.45
Searchlight, O.R. Ex.	2.40
East Highlands, E. High, C.A.I.M.P. Co.	$1.55
Mahala, L.V.W., Brown	2.95
Swastika, L.V.W., Brown	2.40
Modjeska, Xf., Anaheim O.	3.55
Modjeska Fy., Anaheim, O.	2.75
Bell	2.60
Blue Bow, B.R. Groves	3.00
Red Bow, B.R. Groves	2.45
Perfection, Highgrove O.F.A.	2.80
Golden Rod, Highgrove O.F.A.	2.15
Hawarden, Hawarden C.A.	2.05
Arch, Hawarden C.A.	1.90
Fern	2.20
Smilax, The Duarte Co.	1.95
Old Mission, Chapman	3.70
Old Mission Fy., Chapman	2.85
Golden Eagle, Chapman	2.40
Mt. of Olive, Growers F.	3.05
Olive Heights, Growers F.	2.60
Angeles, Growers F.	2.45
Regina, Growers F.	2.65
Big Four	2.25
Mt. or Olive, Growers F.	3.05
Olive Heights, Growers F	2.60
Angeles, Growers F.	2.40
Regina, Growers F	2.65
Big Four	2.25
Dos Palmas, San Marino G.	2.45
El Toreador, San Marino G.	2.10
RIALTO LATES—	
Rialto Crest, Fy. Rialto F. Co.	$1.70
GRAPEFRUIT—HALVES—	
Mahala (brown)	$2.30
Mahala (white)	1.25
Blue Row	1.25
LEMONS—	
Seolus	$3.95
Corus	3.60
Rossmoyne Grove	2.80

CLEVELAND, Monday, Sept. 14.—One car Valencias sold. Market is firm on good fruit. Clear and warm.

VALENCIAS—	Avge.
Pala Bells, R. H. Redlands	$2.40
Pearl, R. H. Redlands	1.60

ST. LOUIS, Monday, Sept. 14.—Cool, cloudy. Market easy. Two cars sold.

VALENCIAS—	Avge.
S. S. Brand, O. R. Orange	$2.35
Cambria, Placentia, M. O. A.	1.50

PHILADELPHIA, Monday, Sept. 14.—Eight cars oranges, one car lemons sold. Cool.

VALENCIAS—	Avge.
Puritan, A. F. Rialto	$2.50
Quality, A. F. Rialto	2.65
Duquesne, A. C. G., C. Oak	2.95
Old Mill, A. C. G., C. Oak	2.10
Las Palmas, S. T., Placentia	1.95
Dos Palmas, San Marino G.	2.70
El Toreador, San Marino G.	2.40
Pronto	2.10
Yacht, A. F. Rialto	1.95
Campfire, S. T., Nordhoff	2.25
Fort Pitt, A, C. G., C. Oak	2.55
Colombo, S. T., Placentia	2.40
Aurora, Amer. F. Dis.	3.15
Sappho, Amer. F. Dis.	$2.30@2.50
Titus Ranch, San Marino G.	2.35
Jupiter, Amer. F. Dis.	1.95
LEMONS—	Avge.
Bridal Veil, V. C. Limco	$2.75
White Cross	2.20

CINCINNATI, Monday, Sept. 14.—Warm. Market advancing on oranges and lemons. Sold one orange, one lemon, one mixed car.

VALENCIAS—	Avge.
Green Crown, A. C. G., Azusa	$2.40
El Toro	1.70
LEMONS—	Avge.
Rough Diamond, V. C., Limco	$2.20
Commodore	2.65

PITTSBURG, Monday, Sept. 14. — Three cars oranges, one mixed car sold. Weather favorable.

VALENCIAS—	Avge.
Naralimo, Spar F. Co.	$2.25
Red Shield, A.C.G., Azusa	2.60
Hunter, A.C.G., Glendora	2.20
Circus, Sparr F. Co.	1.90
Searchlight, O.R., Orange	2.30
LEMONS—	Avge.
California, A.C.G., Azusa	$2.50
Red Shield	3.70
Green Crown	3.30

BOSTON, Monday, Sept. 14.—Ten cars oranges, one car lemons sold. Clear and warm. Market is doing better.

VALENCIAS—	Avge.
Majesty, O.K., Ex	$2.20
Rooster, O.R., Orange	2.80
Pinnacle, O.K., Upland	2.85
Pointer, A.C.G., Azusa	2.05
Golden Fleece, A.C.G., Azusa	2.00
Sappho, Amer. F. Dis	2.50
Green Banner, Sutherland F.	2.35
Standard, National O. Co.	2.15
Native, Sutherland F.	2.00
Mohawk, O.R., Orange	2.85
Glendora Home, A.C.G., Glen.	2.65
Majesty, O.K., Upland	1.95
Hunter, A.C.G., Azusa	1.55
Orchard, National O. Co.	3.15
Sappho, Amer. F. Dis.	2.35
Golden Orchard, Ind. F. Co.	2.25
Jupiter, Amer. F. Dis.	2.10
Freedom, Ind. F. Co.	1.80
LEMONS—	Avge.
Lemon Heights, O.R., Tustin	$4.45
Red Hill	4.10
Purity	3.55

4%

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The SECURITY TRUST & SAVINGS BANK of Los Angeles is the oldest and largest savings bank in Southern California, with deposits totalling over Forty Million Dollars. More than 88,000 individuals claim it as their banking home, and of this number many transact all their banking business by mail. You can bank by mail with this big bank with every assurance of the same safety and satisfaction these 88,000 depositors now enjoy. Deposits can be mailed in the form of checks, drafts, money orders or currency in registered mail. Four per cent interest is paid on Term Savings Accounts. Write for full information regarding banking by mail.

SECURITY TRUST & SAVINGS BANK

Oldest and Largest Savings Bank in the Southwest.

SECURITY BUILDING
Fifth and Spring
Los Angeles

DIFFERENT VARIETIES OF WALNUTS

(Continued from Page 271)

quality of this variety was first appreciated by Discher and Ware of Garden Grove. The nut is of large size, decidedly elongated with parallel sides, apex and base of equal breadth or a little thicker at the apex, rather rectangular or square in end view. It has quite a smooth surface and the sutural ridges are not prominent. Nuts are very uniform and are easily distinguished from any other variety. The shell is rather hard, medium thick, heavy and well sealed. The meat is white, plump and easily extracted after cracking, averaging 45 to 50 per cent of the total weight. While the shell is extra heavy the flavor is very good. The growth is extremely vigorous and rapid, making a large tree with heavy and abundant foliage, having the characteristic of growing its nuts in and under the leaves, thus protecting them from the sun. In first looking at a tree it would seem a poor bearer, but when you get under the tree and look up through the foliage, you will find it heavily loaded. This tree comes out in the spring, about the same time as the Mayette, the buds beginning to swell about April 10. It matures its nuts early in the fall before the Mayette and considerably earlier than the Franquette. It is an early and heavy bearer, surpassing all other varieties in this respect. During my observation it is the most blight resisting of any of the walnuts, not only because it comes out late in the spring, but I presume on account of its extreme vigor it actually resists the blight. The Eureka has scarcely a touch of blight. I do not believe there is any variety of walnut that is not touched lightly by it under blight favoring conditions. While the late blooming varieties are resistant in dry localities, in moist districts and under poor soil conditions they are sometimes touched.

The Eureka is entirely free from perforation, probably on account of its strong shell. It is also free from sunburn on account of its abundant foliage and thick husk, as well as bearing the nuts under and among the foliage. It comes nearer to filling the requirements of an ideal walnut than any of the other varieties. It should, however, be grown on heavy soil with good moisture conditions. As the tree is such a vigorous grower and heavy bearer, without sufficient moisture and nutrition it would be impossible for the tree to be sustained and produce a large crop of No. 1 nuts.

The leading varieties for southern California are the Placentia, Neff's Prolific, El Monte and Ware's Prolific. For central and northern California the Eureka is undoubtedly, all things considered, the best variety on heavy soil with good moisture conditions. Then come Mayette, Franquette and Concord, these being better on the lighter soils than the Eureka.

JAKE'S BAD LUCK

"Here," said the proprietor of the place, "is a little gift for you and Jake. Each bottle is finest old Kentucky rye. You drop in at Jake's on your way and give him this, will you?"

"Sure," replied the grateful one.

On his way he fell and broke one bottle.

"Poor Jake!" he murmured, picking himself up.—Pall Mall Gazette.

COMING FAIRS

California fairs and expositions yet to occur this year are as follows:

Ukiah Hop Festival, Ukiah, September 15-20.

Home Industry League Exhibit, San Francisco, September 24-October 5.

Potato Convention, Stockton, September 25-26.

Inland Waterways Convention, Stockton, September 24-26.

Fresno District Fair, Fresno, September 29-October 3.

California Apple Show, San Francisco, October 1-11.

Sacramento Valley Fanciers' Show, Sacramento, October 2-7.

Riverside County Fair, Riverside, October 6-10.

Industrial Fair, San Francisco, October 17-25.

San Francisco Poultry Show, San Francisco, November 8-13.

San Mateo County Poultry Show, San Mateo, November 12-15.

Willows Poultry Breeders' Show, Willows, November 18-21.

Modesto Poultry Show, Modesto, December 2-5.

Stanislaus County Poultry and Pet Stock Show, Modesto, December 1-5.

Porterville Poultry Show, Porterville, December 15-17.

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USE WALL BOARD

When Building Your New Bungalow and Garage or Remodeling Your Home.

BEAVER BOARD

BEAVER BOARD

is ideal for the production of beautiful panel effects, and makes old and unsightly walls durable and artistic.

It does not crack or damage like plaster, and is easily applied.

SCHUMACHER WALL BOARD

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SCHUMACHER WALL BOARD CO. LOS ANGELES, CAL. W S B

It is cheap as lath and plaster and a perfect substitute. Can be finished in any manner desired — paneled, tinted, papered or sand painted.

A fire resister and sound deadener.

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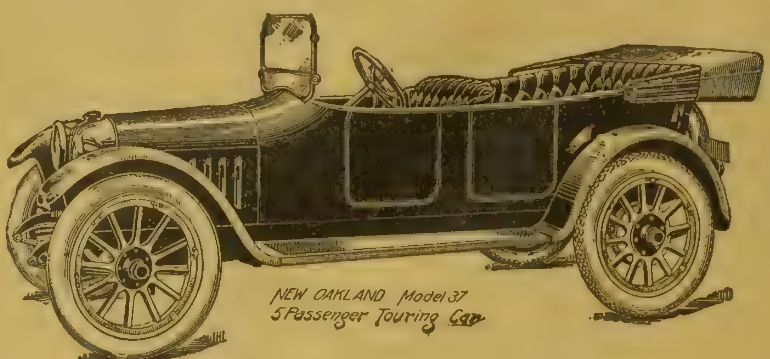
Each New Oakland has back of it the invaluable experience and finances of the world's leading and largest manufacturers. New Oakland success is founded on success and backed by an organization of skilled business men, carefully trained engineers and unlimited resources.



New Oakland Fours and Sixes typify and embrace the highest type of motor cars.

Investigate our claims—analyze these refinements—compare these values. See the New Oakland and ride in it. Full specifications and details promptly mailed.

The Signal

One Ton Truck for Ranchers' Use

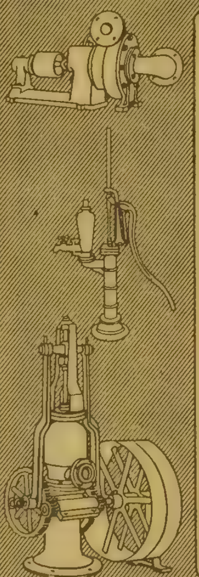
Price $1500.00 (Chassis)
F. O. B. Los Angeles

Continental Truck Motor — Left Hand Drive
Solid Tires — Low Loading Platform

The Signal Truck Will Save You Money on Your Hauling Expenses

Hawley, King & Co.
(Motor Car Department)
1027-1033 So. Olive St. Los Angeles, California

PUMPS



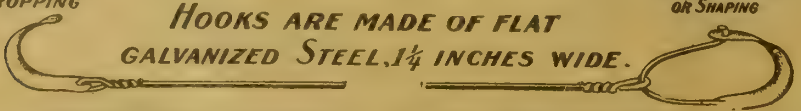
Whatever kind of a pump you need—we have it. Handling all styles of pumps we are not obliged to urge any one type on you, but are in a position to help you select the pump best adapted to your particular requirements. We manufacture and sell

Horizontal Centrifugal Pumps
Vertical Centrifugal Pumps
Deep Well Pumps, Power Heads
Windmill Pumps, House Pumps

Illustrated are three of the many different styles. Don't decide on a pump till you put your needs up to our Pump Specialists. Their advice and suggestions will cost you nothing.
WRITE TO US and state your requirements—by guiding you to a right selection we can probably save you both money and trouble.
FREE CATALOG 28-B describes Bean Horizontal and Vertical Centrifugal Pumps.
FREE CATALOG 28-D describes all other pumps; also Bean Distillate Engines.
A postal will bring either or both by return mail.

BEAN SPRAY PUMP CO.
212 West Julian St. San Jose, Cal.

EXCELSIOR HOOK FOR CITRUS AND OTHER LIGHT PROPPING **TREE SUPPORT** *SPRING LOCK HOOK FOR DECIDUOUS PROPPING AND TRAINING OR SHAPING*



HOOKS ARE MADE OF FLAT GALVANIZED STEEL, 1¼ INCHES WIDE.

Prices per Hundred F. O. B. Pomona, Cal.:
Excelsior Hooks, $1.50 Spring Lock, $3.00
Wire Extra

Better and Cheaper Than Unsightly Props.
Will Last as Long as the Trees

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CALIFORNIA CULTIVATOR

Rural Californian combined with California Cultivator

An Illustrated Weekly Magazine, Devoted to the Rural Home and Ranch

LOS ANGELES September 24, 1914 SAN FRANCISCO

The Personal Side of the State Fair

John K. Cleary and Lieut. Allen. For 21 years Capt. Cleary has had charge of the policing of the state fair grounds. This year he had 50 men to keep the crowds in motion and pickpockets on the outside.

Leon M. Davis and H. S. Baird. Prof. Davis is in charge of the dairy building and Mr. Baird is his assistant.

Ben Rhoades, auctioneer, and Mr. Greer, owner of a fine bunch of jacks and jennets auctioned during the fair.

M. Bassett, the Poland China and Percheron breeder.

Guy Miller leading last year's grand champion in the stock parade.

D. F. Conant leading a blue ribbon winner.

W. J. Hackett, also in the stock parade with a blue ribboner.

N. H. Locke, owner of largest pure bred Jersey herd in California.

C. W. Paine, secretary of the state fair association, on the left, Mr. Taylor of the University farm, and Senator Rush, vice-president of the state fair association, on the right.

Ed. R. Smith of Ocean Park, announcer, and W. P. McNair of Douglas, Arizona, official starter.

Frank L. Mulgrew, director of publicity. The package in Mr. Mulgrew's right hand is Shasta water; we don't know what is in the other hand.

E. Franklin, one of the directors of the fair association, listening to praises of the fair from an old time attendant.

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The man with a deep well doesn't have to worry about the weather. He knows that whether it rains or not he will have plenty of good pure water for irrigation—for live stock—and for domestic use. Shallow wells don't pay. Drill a deep well and be drought-proof.

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It lifts water from great depths very economically—works without jerk, jar or vibration—and seldom requires repairs. A man wrote us recently that he had run his Pomona Pump steadily for 2712 hours, with no trouble, and not one cent for repairs—and he is only one of many.

Pomona Deep Well Pumps *are efficient —reliable*

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Our experts will be glad to advise with you without any cost or obligation on your part, if you will call or write us. Our "Pump Catalog No. 54C" will be sent free to any address upon request. When writing state the depth of your well and its location.

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Pomona, Cal.
Los Angeles Office:
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Make Your Harness Safe

You have no fear of *new* harness breaking. You can place the same confidence in harness that has done long, hard service if you treat it occasionally with

EUREKA HARNESS OIL

That is because Eureka penetrates the leather, lubricates the fibre and keeps the harness soft, pliable and strong. Eureka puts new life into old, stiff harness. It keeps new harness young. It is poor economy to neglect your harness when it may be kept in good shape so easily. Ask your dealer for Eureka Harness Oil.

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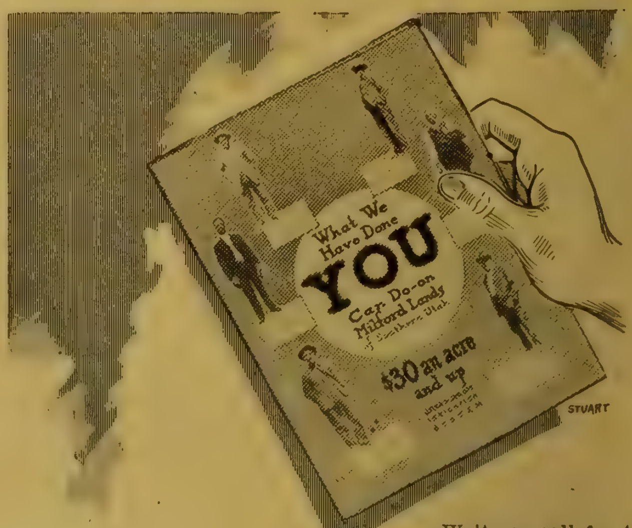
(California)

Pay $30 an acre for land worth $250 an acre when in alfalfa


What We Have Done YOU Can Do on Milford Lands
$30 an acre and up
STUART

Write or call for this booklet.

This is an unusual project for unusual people. It is designed for farmers and investors who demand the exceptional. This is a project on which the right man can become rich. This is not for homesteaders—but for those who have already made good, and want an opportunity to do still better.

Special Milford Features

Deep, rich, loamy soil. A soil that will not bake. A soil free from alkali.

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Alfalfa—average five tons to the acre—average yearly market value $12 to $15 per ton in the stack.

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A better dairying country than Southern California. Where dairy products command "Mining Camp Prices" the year around.

A bean country that will rival the Ventura District.

A better hog country than Iowa. Hog cholera unknown. A deciduous fruit country that will equal any fruit valley in the west. Unsurpassed soil for garden truck of every variety.

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A gravity irrigation system—abundant water supply—exceptionally low maintenance cost—30c per acre per year maximum. Write or call at once for our illustrated booklet containing live information, facts, figures, and testimonials from practical ranchers who have lived in this rich valley for forty years.

On August 30th a party of Imperial Valley ranchers purchased 1000 acres of Milford land a few hours after stepping on the ground. This is a tribute to Milford soil, climate, water, crops, transportation facilities and investment possibilities that any thinking man will quickly appreciate.

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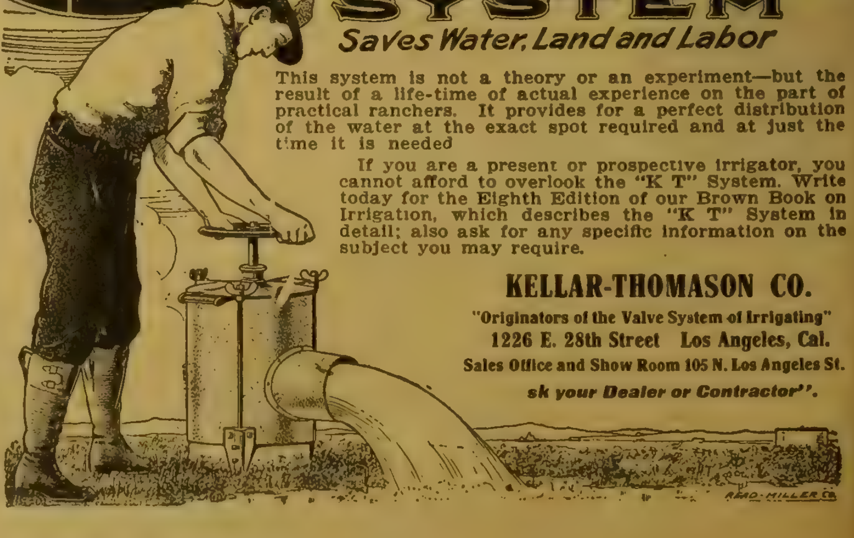
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California Cultivator
Rural Californian combined with California Cultivator

Vol. XLIII No. 13 LOS ANGELES: THURSDAY, SEPTEMBER 24, 1914 One Dollar Yearly

Some Notes and Awards at State Fair

The Camera Tells the Best Story of the 61st California State Fair but, a Few Notes and Horse and Cattle Awards are Added. Attendance Rather Lighter than Last Year, but Net Receipts Will Show the Association to the Good.

"Look at that crowd of a few hundred people to see the most magnificent stock parade ever made on the Pacific coast. Then think of yesterday's crowd—a mob of 40,000 shouting people—to see two locomotives made into junk. I would not have missed that parade for $50." That was a remark made by a director of the state fair association in front of the grandstand on Thursday morning. We know it is in good form to refer to the parade as the most magnificent and finest ever, but certainly this year's exhibit of stock at Sacramento was wonderful and gave satisfaction to every well wisher of the state. For years we have urged that more attention be given to live stock, and we believe the industry is coming to its own if the state fair has any promise for the future. The director spoke truly when he referred to the fact that there were but a few hundred people to witness the great exhibits. The governor of California and his staff were present and probably a great number of distinguished people were there to see the stock parade, but for numbers, Wednesday, locomotive smash-up day, was simply astounding. The three great grandstands were jammed. The great enclosure between the grandstand and track was so thickly massed one could hardly push his way through, even the band was so crowded as hardly to be able to operate. Roofs of buildings on the far side of the track were black with people. Telegraph poles around the grounds were also utilized by boys and men as well, all to see a head-on collision. Financially, head-on collisions pay, but agriculturally there isn't much money in thrills.

The weather surprised everybody. It was fine, although Secretary Paine complained because it was too cold. He said: "It takes hot weather to make a successful fair in Sacramento," but for the majority of us it was most agreeable.

One mistake of the management was the moving of the tractor and implement exhibit to an enclosure at the south side of the grounds, without giving due notice by banner or otherwise at the former location, which was at the extreme north end of the grounds. The tractor and threshing machine men felt this was not giving them justice because they got but very little attention from the general run of visitors. Those who came to see that class of implements hunted until they found the place. There were not as many tractors exhibited as last year, but some remarkably fine demonstration work was done, which kept those interested in tractors at attention from early forenoon until evening.

Of course, the classy events of the fair were held in the evening. Society attended in force and filled the stock judging tent, which in the evening became horse show pavilion. These horse shows were really classy and gave sufficient proof that California is not entirely engaged in consuming gasoline. There were five and seven gaited saddlers. There were "hunters" with both ladies and gentlemen in hunting costume, there were tandems and one lady in particular showed much skill in handling two very spirited horses.

A State Fair Poland China

There is one building in which the exhibits, to a casual onlooker, remain much the same each year. This is the horticultural building, or the main building of the grounds. It is given over to the various counties for the making of exhibits of the products of those counties and to booths for the sale of "Pine Nectar," Armour's grape juice, etc. Why Armour's grape juice we were not informed, for it certainly seems that with all the production of grapes which California engages in there might be a bit of California-produced grape juice offered in the main horticultural building of our state fair. By the way, the "dope" which was sold for Armour's "juice" was not a good advertisement, and perhaps it is well that California juice was not dispensed as was the eastern-made stuff.

Fresno County won the $600 prize for the largest and most complete exhibit of products; Placer County, second, $400; Alameda County, third, $250; San Joaquin, fourth, $200; Butte, fifth, $150; Colusa, sixth, $100; Calaveras, seventh, $75; Santa Clara, eighth, $50. For the largest and best exhibit of exclusive farm products San Joaquin won first, $100; Butte, second, $75; Colusa, third, $50. For best display of fruits, vegetables and flowers, Alameda took first money.

"Vote Yes for State Fair Bonds Proposition No. 37 — To Properly House Live Stock" was in evidence at many points on the ground. Additional land has been secured and part of it was used this year in making the place for tractors and implements, but the dairy headquarters are overcrowded. Worse, it has been necessary to divide the dairy exhibits. Some of the cows were placed at the extreme northern end of the grounds and others at the southern. In the milking test, owners of those at the far northern end were compelled to lead their animals to the place of making the test through a jostling crowd of people. No cow with any nerves will stand for such treatment and give her maximum. If the bonds are voted it will be the aim of the management to give ample headquarters for all dairy animals in one section. In addition there will be several large structures to care for other exhibits. The magnitude of the live stock exhibits was not appreciated until almost the last minute, when Secretary Paine found himself with vastly more stock on hand than could be housed. In eight days Secretary Paine secured workmen and material and constructed stalls for 120 cattle and 70 horses.

* * *

CHAMPIONS

The competition for the grand championship honors in all the live stock classes this year was very keen. In the Holstein class the grand champion bull of last year, Lorena Korndyke, and the grand champion cow, Inka Tritomia; of last year, came back and took their positions this year.

Percherons: Champion Stallion, Londricitos, Whitehall Estate; Champion Mare, Fritezi, C. A. Penniger.

Belgians: Champion Stallion, Vulvain De La Cobocherie, G. L. Luhrsen.

Clydesdales: Champion Mare, Lady March, O. H. Brant.

Shires: Champion Stallion, Salvador Forest King, H. Wheatley; Champion Mare, Lady Redlinch, Wheatley.

Champion Jack: Jumbo, C. W. Blevins; Champion Jennie, Jennie Flood, M. A. Merrill.

Beef Cattle.

Shorthorns: Senior Champion Bull, Greenwood King; Junior, Mysie's Knight; Grand Champion Bull, Greenwood King; Senior Champion Cow, Lady Perfection; Junior, September Morn; Grand Champion Cow, September Morn, all owned by T. S. Glide.

Herefords: Senior Champion Bull, Young Donald, Simon Newman; Junior, University Prince, U. of C. Farm, Grand Champion Bull, Young Donald, Simon Newman; Junior Champion Cow, Lenora D, Simon; Grand Champion Cow, Lenora D., Simon.

Red Polled: Senior Champion Bull, Corbet; Junior Champion Bull, Dandy Heil; Grand Champion Bull, Corbat; Senior Champion Cow, Laura Davyson; Junior Champion Cow, Elorie, Grand Champion Cow, Laura Davyson, all owned by R. C. Cartwright.

Dairy Cattle.

Holstein-Friesians: Senior Champion Bull, Lorena Korndyke, Jas. McGillivray; Junior, Prince Juliana Walker, A. W. Morris; Grand Champion Bull, Lorena Korndyke, Jas. McGillivray; Senior Champion Cow, Inka Tritomia

(Continued on Page 296)

All the car lines of the city end at the gate of the fair grounds.

Approach to Horticultural or Main Building from the entrance. Manufactures Building on the right.

A faint impression of Collision Day crowd.

Tandem. One of the features of the evening horse show in the judging tent.

A megaphone announces that everyone must have a fifty-cent piece to lay on the turnstile in order to secure admission. On Wednesday, when the crowd was greatest, the turnstiles were not sufficient to pass the people. Larger gates were opened and directors held large sacks into which the half dollars were dropped.

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ORANGES :: LEMONS
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FROM THE ROOTS UP

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TREES

Buy Foothill Grown Trees

For good roots, thrift, and hardiness they can't be beat. Quality considered they challenge all competition. We are prepared to furnish the best of everything. Olive, Almond, Peach, Pear, Plum, Prune, Apricot, Cherry, Apple, Walnut, Grape, Quince, etc.

Orders are being booked daily, and we urge you to not delay.

WRITE US

Silva-Bergtholdt Nursery Co.
Box 751, Newcastle, Cal.

When writing advertisers, mention the Cultivator.

Citrus and Tropical Fruits

(Cultivator, October 17, 1912)

OLIVES, PICKING AND PICKLING

Written for California Cultivator

By Mrs. M. E. Sherman

(Many subscribers have requested that the following article be reprinted. It was written by Mrs. Sherman for the Cultivator of October 17, 1912, and has been a standard for reference on this subject.)

The equipment furnished by the orchardist consists of ladders, bags and boxes. Stepladders are narrow at the top where they pinch into the third leg that opens out as a support. It makes these ladders more steady if two three-foot pieces are cut at a slant and nailed on each side of the single leg. These pieces spread out on each side and make a fork that prevents the ladder turning sideways. The step part flares out to 24 inches at the base. This gives these side slats on the one leg side a spread of 12 inches from the center, yet they will not project when the ladders are piled away in the off season.

The majority of the ladders are 15 feet long. Every twelfth ladder should be at least 20 feet long. This will give enough long ladders for an ordinary orchard. A number of light poles of bamboo with a wire hook on the end will be very useful to hook over long branches that will bend over readily to reach the pickers' hands. The men must not be allowed to knock off the fruit, but must pick it by hand.

Careful Handling.

We use the smallest size orange picking bag to hold the olives. These bags may have to be shortened, for 15 pounds is as much as should be picked before emptying them, as the under berries crush when a picker moves around with them in the sacks. We make it a rule to have the men empty their sacks every time they come down the ladders, even if they have only a pound in them. The handling of a ladder is rather an awkward matter, and the olives must not be bruised. The 40-pound lug boxes stand close by the trees, and the pickers carefully let the fruit slide into them. There is sometimes a tendency to put in too many leaves, but as these come out in the grading it is not serious. They weigh so little that it is not of much account in the ordinary way of looking at things. The company purchasing, however, is out after faults, and may fuss.

Grading for Size and Color.

As soon as the olives are picked, if the crop is at all large, it will pay to grade them. The grading for size makes them look better, while the grading for color makes a still better pack. When the meat of an olive slips from the pit when squeezed it is ready to pickle, though we often leave them until they grow as black as possible. If there is even a little color on an olive it will darken up when put into the brine.

Where large quantities are handled it pays to have cement troughs, with water piped and cranes for handling the boxes. In handling them for domestic use half barrels are most convenient. We buy whiskey barrels if possible. These are cut in half and the hoops securely nailed to them, and they will last a number of years. We also run around the top, inside and out, a strip of the iron box strapping such as is used on the picking boxes. Now put some lime into these barrels and fill them with water until the time comes to use them. Before using scald them well with hot water. Then into each 12½ gallons of water put 1½ pounds of Greenbank or Hercules lye and a couple of pounds of salt, filling the barrel three-quarters full. We like to put the olives into the water rather than risk bruising by pouring into the empty barrel.

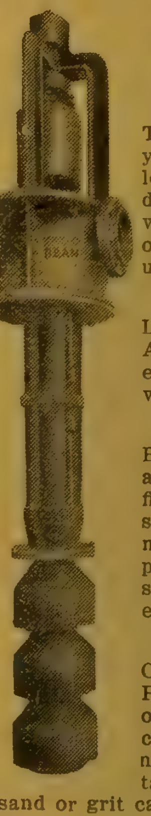
The lyes mentioned are the ones preferred, as they are free from other substances that tend to bleach the olives. This solution is left on until it begins to show in the olive. After 12 hours test the olives by cutting one open, and if a yellow stain reaches almost to the pit the lye is run off and fresh water put on. Put into this water a pound and a half of salt. The water should cover the olives three or four inches. Stir them with a wooden stick every two or three hours. Change the brine every other day. After two days taste, and if the bitterness is not all out repeat the lye. The use of the salt prevents softening of the olives and also fixes the color in a measure. Let the light into the olives when in the brine, but avoid the direct rays of the sun. The necessity for this last caution is not certain, but until it is worked out we think best to do so.

There are ways of hurrying up the olives in pickling them. One is the use of hot lye. If the water the solution is made in is put into the barrels hot and the olives put into it the penetration is quicker. The water at the time the olives are added should be as hot as the hand can bear, not hotter, or the skins may come off. The lye as weak as we have given it is known as a 1½ per cent solution. That is 1½ pounds to 100 of water. It can be left on 24 or 48 hours, for as soon as it has acted on the acid of the juice the olives will render it neutral. Now to salt the olive, as soon as the bitterness is out, make the next water heavier in salt. We usually put in 2½ pounds and leave it on three days, and then five pounds to the 100 of water. Remember that a five-gallon can two and a half times filled with water is about 100 pounds, or 12½ gallons of water is close to 100 pounds. In salting the olives, if we put all the salt into the brine at once the olives will pucker up like a washerwoman's fingers. If this happens, simply put a dose of clear water over them for a couple of hours and then make a weaker solution of brine.

Olives will keep a reasonable length of time in open vessels if the brine is watched and boiled often enough to keep down the bacteria. It is better to can them either in tin or glass while they are perfect. We are using some on the table that have been in glass seven years, and cannot see that they are not as good as those canned last year. As the olives only need to be sterilized to make them keep, it is better to put them into the jars or cans before heating them. Pick them over and drop them into fresh water so they are free from any slime. Make a brine of the same strength they are taken out of. Boil this brine and skim it carefully. When lukewarm cover the olives in the jars or cans with it. Then stand them on boards in the wash boiler. Put water around them half way up to the tops. Put on the cover of the boiler and let them cook. As soon as the water in the jars or cans has boiled five minutes they can be lifted out and sealed at once. Have the covers well washed and in a pan in the oven so they will go on warm. The contraction of a hot jar or can is often too great to make the sealing perfect if the covers are put on cold.

SUPPLY OF POTASH SALTS

Outside of Germany there is no known commercial supply of potash salts. If the German supplies are cut off during the European war, the agricultural world must either go without potash salts after the meager supply now on hand is exhausted or bestir itself to find another adequate dressed to the United States geological survey, and the fertilizing journals report that small quantities of spot source of supply. Already many inquiries regarding potash have been admaterial are changing hands at sharp premiums. The situation is undoubtedly more acute than it was a few years ago when national interest was first awakened to the fact that the United States is entirely dependent on Germany for this important class of fertilizer materials.



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For Deep Well Work

Install a Bean Turbine Pump and your water problem is solved. It does the work when other types of pumps would be useless.

AUTOMATICALLY WATER-BALANCED, a feature every pump owner will appreciate.

PLENTY OF BEARINGS — they are placed every five feet. This insures perfect alignment and makes possible highest speed and greatest efficiency.

LINE SHAFT IS CENTRAL TO PUMP. — entirely outside of discharge pipes and never comes in contact with water. No sand or grit can get in the bearings.

THREE PIPE DISCHARGE— the pipes being simply and securely bound together. This means strength, yet sufficient flexibility to insure satisfactory work in wells that are not perfectly straight.

DIRECT CONNECTED TO MOTOR—if desired.

Send for further information if you're interested in deep well pumps.

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West Julian St., San Jose, Cal.

Spraying Time

and there is no better spray than

Scalefoe

Not only for scale but nearly all insects, worms and bugs that infest plant life. It has been killing them for 15 years, giving the greatest satisfaction without injury, but positive benefit, to the plant. Write for circular with testimonials or better, try it.

Gallon can, 50c;
5-gal. can, freight prepaid, $2.00.

Must be mixed 20 parts water to one Scalefoe before using, making it very cheap. Write for prices in barrels delivered at your freight station.

SEEDS

At LOW PRICE and NO PRICE can Buy Better. Free Catalog.

West Coast Seed House

TOMPKINS & CO., Proprietors.
116-118 E. 7th St. LOS ANGELES

IRIS Illustrated catalog containing valuable information, and beautiful color plate, 15 cents. List with prices on over 200 varieties free upon request.
THE DEAN IRIS GARDENS, Moneta, Cal.

Wide Use of Potash Salts.

Potash salts are employed in many industries other than the fertilizer industry. A large amount is used in glass and soap making and in the manufacture of a number of chemical products. These include potassium hydrate, or caustic potash, and the carbonate and bicarbonate of potash used principally in glass and soap making; the potash alums; cyanides, including potassium cyanide, potassium ferro-cyanide, and potassium ferri-cyanide; various potash bleaching chemicals, dye stuffs, explosives containing potash nitrate, and a long list of general chemicals.

The Work of the Geological Survey

The needs of the manufacturers and the farmers of the country are well known and keenly appreciated by the geological survey. Since the question of a domestic supply of potash salts has become of public interest the government has endeavored to locate deposits in this country and has followed up every clue that seemed to promise results of importance. The survey's work has extended from New York to California and from Michigan to Louisiana, and has covered all branches of investigation where results might be expected, exclusive of the study of kelp. Its investigations have been carried along several lines. (1) Deep drilling for saline residues has been done at Fallon and during the past year in Columbus Marsh and Black Rock Desert, Nevada, and will be continued in Black Rock Desert this year. (2) Natural and artificial brines and bitterns have been collected at all the salt-making establishments in the United States and a great many other localities, and examined. (3) Deposits of alunite and other minerals containing potassiums have been investigated in Utah and other states. (4) Certain occurrences of igneous rock known to contain considerable quantities of potash salts have been examined. Much work has also been done by private initiative along practically all the lines mentioned above. The bureau of soils of the department of agriculture has investigated the kelps. The work is not yet finished and will be pushed with increased vigor provided the necessary funds are supplied.

To all those interested in the subject the geological survey will be pleased to send free of charge the available reports which have been issued on potash salts. Inquiries should be addressed to the Director, U. S. Geological Survey, Washington, D. C.

FUMIGATION PAYS

An interesting exhibit at the state fair was of some of the practical work being done in field and orchard at the University of California. There were samples of grains, samples of soils and samples of many other things agricultural. An exhibit which attracted much attention was a small model of an orange orchard. Some of the trees were being covered with fumigation tents, others were fully covered, while models of the water and acid wagons, both with dummy horses, together with the cart for the cyanide, were almost complete. It gave immediately an idea of the work which, would have necessitated much traveling in orchards during fumigation operations to acquire. In addition to the tents and appliances shown in the model there were other exhibts of cyanide, fumigation pots and so forth.

Speaking of fumigation we are reminded by one correspondent that it is proving one of the most profitable features of citrus orcharding. The writer tells us that one citrus fruit grower at Alhambra has an orchard in which there are nine short rows of trees which failed of fumigation last season because long continued wet weather prevented work at the proper time. The trees which had been fumigated, standing alongside the unfumigated trees and receiving, so far as fertilizer, irrigation and cultivation were concerned, identical treatment, show a setting of fine fruit in large quantity. The unfumigated trees have comparatively no fruit, and it is of low quality.

TO THE CITRUS FRUIT GROWER

Who wants to raise MORE FRUIT and BETTER FRUIT

PRACTICAL EXPERIENCE over many years has DEMONSTRATED to the satisfaction of all keen observers of causes and effects, that SCALE CONTROL is BEST OBTAINED by FUMIGATION with HYDROCYANIC ACID GAS.

CORRECTLY FUMIGATED TREES

PRODUCE

MORE FRUIT AND BETTER FRUIT

CORRECT FUMIGATION may be had only through RIGHT METHODS. The GROWER when fumigating SHOULD KNOW

THAT **chemicals** of **known strength** and **quality** are used, and in **proper quantity, rightly proportioned** to secure correct gas delivery from the generator for safe, efficient fumigation.

THAT **tents** are in **perfect condition** to insure against excess **gas leakage.**

THAT **correct dosage** is always applied—this is best obtained with **marked tents and careful measurements** so that reasonably correct calculations will be made of the cubic space under a tent over a tree—and that the DOSAGE is made to FIT the CUBIC SPACE to be filled with Hydrocyanic Acid Gas.

THAT **dosage charts scientifically figured** are available for field use.

THAT different scale pests, and the same species in different stages of development, require varying gas volume under tents to at all times get highest killing efficiency; this gas volume is controlled by the cyanide dosage and mixing formula for cyanide, acid and water.

THAT **the mixing formula** (the proportions of cyanide, acid and water) MUST be RIGHT, as too **little acid for a given** amount of cyanide **interferes** with the **chemical reaction, too much** means **waste, too little** water causes **explosive generation** and the crystallizing (freezing) of residue, **too much** water REDUCES the GAS DELIVERY, **wastes cyanide** and **impairs efficiency.**

THAT the proportions of cyanide, acid and water to secure maximum gas delivery from a given amount of cyanide have been scientifically worked out and should be carefully followed, except

THAT when operating on SMALL TREES with a cyanide dosage of 3 OUNCES and under the formula should be changed—double the amounts of acid and water.

THAT reasonable **supervisory watchfulness** while trees are being treated will insure more careful attention to details by field operators, with **better clean-up results.**

THAT inspection of fumigated trees to determine scale **killing results** should be made not earlier than **seven** and not later than **fourteen** days after being fumigated.

THAT the inspectors should be **competent, painstaking** and **thorough—MEN with** the CONSCIOUS KNOWLEDGE that **important responsibilities rest upon them.**

THAT damages to trees and fruit, while infrequent and small, when compared with benefits obtained, do at times occur, and in most cases **through no fault of the operator;** such damages, to a certain extent at least, should be at the **cost of the grove owner.** Reasonable treatment of the field operator, with **less demand** for **reparation** by the grower, will secure for him better scale-killing results, or, say a MAXIMUM BENEFIT at a MINIMUM COST.

THAT wind is a factor in spreading scale pests; tests made in a unique way show young scale carried as far as 600 feet (possibly farther, **but not satisfactorily proven).**

THAT the **block system** in cleaning infested districts is the only safe method to **insure** getting **full value** out of a clean-up campaign.

THAT **the** grower **by** watchful intelligent and painstaking study of conditions and correct co-operation with field operators will secure **better results** from the money expended for the **fumigation** of his citrus acreage.

THAT the PERMANENCY of the CITRUS FRUIT INDUSTRY hinges on **correct control of scale pests,** and this control is best obtained through the FUMIGATION OF THE TREES WITH HYDROCYANIC ACID GAS.

THAT many testimonials similiar to the following are in our files:

W. H. Jameson Co., Corona, Cal., says:
"In reply to your favor of the 18th we have to say that we are strong believers in fumigation with Cyanide, as we consider it the most practical way to control the scale pest that has as yet been discovered."

Mr. Hemphill, manager for C. C. Chapman, Fullerton, Cal., said:
"Correct fumigation spells clean trees, more and better fruit, highest prices in the market, and larger returns for the grower."

Mr. O. B. Griffin, assistant manager Leffingwell ranch, Whittier, Cal., said:
"The fumigation of citrus trees is a profitable investment for the citrus fruit grower, and properly done will bring large returns."

CYANEGG FOR FUMIGATION R&H Co TRADE MARK

A. F. Call, Corona, Cal., said:
"Replying to your inquiry, I did not suppose any California Citrus Grower in this day and age would doubt the absolute necessity of fumigation for scale. Any man who has scale and cannot fumigate should sell out as soon as possible, for there is no place for him in the business."

Mr. W. C. Hendricks, manager, Azusa Citrus Association, Azusa, Cal., says:
"The cost of fumigating citrus trees should not be considered as a part of the expense account in the handling of a citrus grove, but rather as an investment that brings speedy and large returns on the money paid out."

CYANEGG FOR FUMIGATION R&H Co TRADE MARK

F. W. BRAUN, Los Angeles, Pacific Coast Agent.

THE ROESSLER & HASSLACHER CHEMICAL CO., New York City.

Cyanegg and A. A. C. Co.'s Sulphuric Acid are Guaranteed as to Strength and Quality.

Deciduous Fruit Culture

PEAR GROWERS MEET

Written for the California Cultivator

We once heard a fruit grower—a most successful one—say in a convention that were it not for the pests and the difficulties generally which confront the fruit growers he would not be in the business. That is, if the conditions were so favorable that any indifferent or lazy orchardist could produce fine fruit the business would soon be so overdone that he would have to quit. He preferred to sit up nights and scheme overtime, when many another had gone to bed grumbling at providence or fate or at something which may have sent him a visitation.

The pear growers in the Sacramento valley are offered a similar opportunity to make money on pears. A few are taking advantage of it; more are not. In fact so many are not that some alarm is felt that they and the state will suffer serious loss unless they wake up and get into action and wipe out pear blight.

Pear blight has ruined thousands of acres of fine orchards in the Sacramento Valley and some orchards are looking today as if a fire had swept through them. For some reason, climatic or otherwise, blight is far worse than for years. To discuss the matter and devise means of bettering conditions a meeting was held in Sacramento Wednesday, September 16, at which the most progressive pear growers were present.

Unfortunately the attendance was not as heavy as the subject would seem to demand, but the few who were there determined to take up the fight to wipe out the pear blight. One feature of the meeting was a trip across the river to view the work of Hayward Reed. Mr Reed's large orchards have proven wonderfully profitable, and for more than ten years he has been a consistent fighter of the blight. At the present time he is spending $125 daily in keeping his force actively cutting and pruning blighted branches. He has followed the method prescribed by Prof. Waite, sent here by the department of agriculture more than 10 years ago, and, as remarked in the meeting, there has been little added to the knowledge of pear blight and methods of handling since Prof. Waite's investigations.

The most perplexing feature of the problem is the indifferent grower who is permitting his orchards to die with the blight and to infest neighboring trees. Mr. E. A. Gammon, a large grower on the river whose faith in the pear industry is such that he is still planting thousands of trees, was chairman of the meeting. As he remarked, the question was not so much one of the pear tree or the pear blight as of the pear grower.

Commissioner Stabler of Sutter County felt that it was a matter largely for the horticultural commission. Rigid enforcement of the law without favor to any would soon end, or at least bring under control the blight question. The trouble is many sections do not fully sustain the horticultural commissioner in his effort to eradicate pests. He felt that we cannot control pear blight by resolutions.

In a word, the resolutions called for fuller support of the horticultural commissioner and contained an appeal to the state university and to the federal department of agriculture for all the aid possible as to best methods. It was ruled that a copy of the resolutions be mailed to every county supervisor in the state of California.

Dean Thos. F. Hunt, director of the state experiment station, was present and wished to know what was desired of the state university. It was anxious to aid in every way, and as had been remarked, Prof. Waite's instructions were ample if the grower would carry them out. There was no very definite answer given to Dean Hunt, but presumably the university will take a hand in the present fight.

One of the first steps felt necessary is the organization of growers in every district in the state.

WALNUT GROWERS' BULLETIN

The California Walnut Growers' Association will name opening prices, new crop walnuts, Thursday, Septembe 24. All of our brokers will immediately thereafter receive wire giving full details which will be passed on by our broker in your market without delay.

Foreign Situation

We had hoped to have more definite information regarding the foregn walnut situation to place before you before opening prices were named by us. We have had several cables out to our two European agents for six days. These have evidently not been delivered nor have we had any cables from Europe for the last week. Are unable to account for this situation unless the cable censors have refused to let our wires pass. It is almost impossible to get prompt wire service with the continent at present. We hope to have some further cable information, however, before naming prices, and any developments of importance will be wired to our brokers on the night of September 23, and this information will be available to you.

What seems to be of particular interest is whether or not France has placed an embargo on the exportation of walnuts. We have information both ways and are just today in receipt of wire from Mr. A. H. Baldwin, chief of bureau of foreign and domestic commerce at Washington, as follows: "Walnuts not specified among articles subject embargo France in documents so far received bureau."

Also we were advised under date of August 15 by cable from one of our European representatives that walnuts were excluded from French embargo. However, on September 4 we received cable from this same agent advising that walnuts were now included in this embargo, which cable was confirmed on same date, our agent stating in part as follows: "With respect to the exportation of walnuts, we have been making the closest inquiries in France and learn officially that the embargo placed by the French government on foodstuffs includes walnuts. We have thereupon cabled you this information today. As, however, we have written you in our previous letters, even if this embargo did not exist, we cannot see how exports can be made. The northern armies now lie right across the Calais-Boulogne-Paris road and probably will cover the Havre road shortly. With regard to Bordeaux, it is practically impossible to get anything into the port from the interior on account of the lack of rail facilities and shortage of labor. The Grenoble district is very close to the theatre of war and in fact large quantities of German prisoners are being interned near there. Marseilles is the port for Grenoble, but there is very little shipping available, even if walnuts could be sent through. We are informed that the embargo will very probably continue until the end of the war, and if this is so, there will be no shipments this season. We will, however, keep in close touch, that is so far as we are able, and let you know immediately of any fresh developments."

Please tell the advertiser that you read his advertisement in this paper. Now, don't go away and forget it.

We are placing these conflicting statements before you that you may draw your own conclusions. We will undoubtedly wire something absolutely definite regarding this embargo to the brokers on September 23.

The latest estimate we have of the French crop was under date of August 15, placing the total figures, all grades, at 15,600 tons, made up as follows: Mayettes, 1900 tons; Marbots, 5200 tons; Cernes, 5000 tons; all other varieties, 3500 tons. This is a slight increase over last year's light production. Our figures on the Italian crop are above normal; total crop estimate, under date of August 7, nearly 2000 tons. We understand that Italian troops are fully mobilized. The above figures were based on the entire crop being harvested. It is reasonable to suppose, in view of recent developments, that a large portion of the French crop may not be harvested. We are also informed that the German-Japanese affair in Shantung province, China, will undoubtedly delay importation of best grade "Manchurian" walnuts, which are largely produced in Shantung province. The maximum importation of Chinese walnuts to the United States in any previous year was less than six million pounds, of which only 33 per cent reached here before January 1. During the year ending June 30, 1912, France, Italy and China imported to this country 32,452,000 pounds of walnuts. Total imports that year were 37 million pounds. There were consumed in the United States in the same period, 62 million pounds of walnuts. The California production this year will not exceed 20 million pounds, and final estimates of the crop we are now securing from all growers indicate that the total crop will only run to 17½ million pounds. Our experience is, however, that growers usually underestimate their production. Taking for granted that California will ship the maximum estimate of 10,000 tons and that the entire crop of France, Italy and China is dumped on the American market this season, the supply will still be below the consumption for the one year period above referred to. In view of the troubled conditions abroad, it is reasonable to suppose that at best but a portion of their total crop will reach our shores before the turn of the year.

California Crop Conditions

The light California crop continues to show excellent quality and we believe that shipments will all be completed by November 5 unless unfavorable weather conditions are encountered.

In conclusion we wish to state that it will be our policy this season to name prices which we believe will move the California crop speedily, and we hope that the quality of our deliveries and the service we give our trade this season will prove entirely satisfactory and warrant a continuance of past patronage.—California Walnut Growers' Assn.

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Fred V. Johnson, manager Yuba Construction Co., is the second from the left.

Mr. Schmeiser and some of the demonstration force of the Schmeiser Manufacturing Co.

Neat Stalls. Prizes were offered to grooms for keeping stalls and alleys in neat condition.

Messrs Wisker, Gammon and Reed, who attended meeting of pear growers during the fair.

REDWOOD SAWDUST PACKING FOR GRAPES.

By packing California table grapes in redwood sawdust shippers last season were enabled not only to increase greatly their domestic trade but to export several thousand drums or barrels to the West Indies and South America. They sold abroad at prices fully equal to and sometimes in excess of the prices paid for imported Spanish Almeria grapes packed in ground cork. One small lot was exported and sold in London. A carload of 600 drums was also sent to Mexico City, where unusual conditions raised the price to approximately $5,000 for the lot.

The improved packing which made these export shipments possible was also a great stimulus to the domestic trade. By packing with redwood sawdust, a method developed by the United States department of agriculture, shippers were enabled to hold their fruit successfully in storage at eastern points for periods of from 30 to 60 days or until the end of the Christmas holidays. Thus very satisfactory prices were obtained between November 20 and January 5.

The result was a new record in the marketing of California table grapes. The shipments from the San Joaquin Valley to the principal markets of the United States and Canada increased in 1913 to 70 carloads or twice the amount shipped in 1912.

For three successive years now the grape storage investigations conducted by the bureau of plant industry of the department have borne fruit in the successful shipment of grapes packed in redwood sawdust. Under favorable conditions of handling large commercial shipments of these grapes have been sold at auction at an average price of more than 15 cents per pound or $300 per ton. And on the other hand, poorly graded, inferior fruit unfit for storage purposes has not only been handled at a loss but has served in some cases to prejudice fruit buyers against all California grapes packed in redwood sawdust.

During the packing season of 1913 there was an active demand for the sawdust packed grapes in drums. Many orders were received by the California shippers and a considerable portion of the crop packed in drums was sold to jobbers in various markets of the country at a uniform price of $2.25 a drum f. o. b. California. Growers however who sold their own sawdust packed grapes at auction in New York or Chicago secured, after deducting freight and storage charges which amounted to about 90 cents a drum, a much higher average return than these f. o. b. California prices yielded. Reports of the auction sales in New York show that 3,389 drums were sold between November 28 and December 12 at an average price of $3.58 a drum, while 3,980 drums were sold from December 15 to January 5 at an average price of $4.05. In Chicago 3,482 drums were sold at an average price of $3.83 a drum.

The experimental results and commercial phases of handling California table grapes packed in drums with a filler of redwood sawdust are fully discussed in a recent bulletin of the department of agriculture entitled "Factors Governing the Successful Storage of California Table Grapes." This publication, which describes the handling, shipment and storage of grapes packed in redwood sawdust according to methods developed in the department's work, will be sent free on application as long as the department's supply lasts. Special emphasis is placed in this publication on the necessity of improving the commercial grading and packing of fruit intended for storage beyond the regular marketing season.

While the market prices received for sawdust packed grapes appear to be exceptionally high, shippers must remember that this method of handling the fruit is expensive. Only fruit of the best quality, uniformly graded and properly packed, should be used. The growers and shippers who have exercised the greatest care in the handling of grapes packed in redwood sawdust have realized exceptionally high prices, but on the other hand, those who have shipped poorly graded and inferior fruit have done so at a loss and have also served to lower confidence in the standard fruit.

The Red Emperor Grape.

The success of the past season has been a pronounced victory for the Red Emperor grape. The Red Emperor is at present the only variety grown in commercial quantities which possesses storage and shipping qualities in any way comparable to those of the Spanish Almeria, its chief competitor in foreign and domestic markets. It ripens however late in the season and reaches the most profitable markets at a time when these are already flooded with the products of vineyards closer by.

Partly on this account the demand a few years ago for Emperor grapes was restricted and the production of these grapes had ceased to be profitable as compared with other fruit growing enterprises in California. The result was that many of the grape growers seriously considered uprooting their vineyards or grafting them over to other varieties. But the introduction of the sawdust drum package has made it possible to hold the grapes in cold storage until after the regular season. The Red Emperor grows in large handsome bunches weighing from a pound and a half to two pounds and when it can be placed on the market in good condition for the holiday season it meets with a hearty welcome. The result is that the production of Emperor grapes has already been placed on a new and profitable basis.

The storage experiments however reported in the department's bulletin have dealt with all the more important varieties and have involved a thorough study and trial to determine the possible maximum holding period of the grapes in storage and their behavior during transportation to market. Problems relating to the propagation in California of Almerian and other long keeping varieties are now receiving attention with a view to the introduction of new and promising varieties especially adapted to shipment and storage in drums or barrels.

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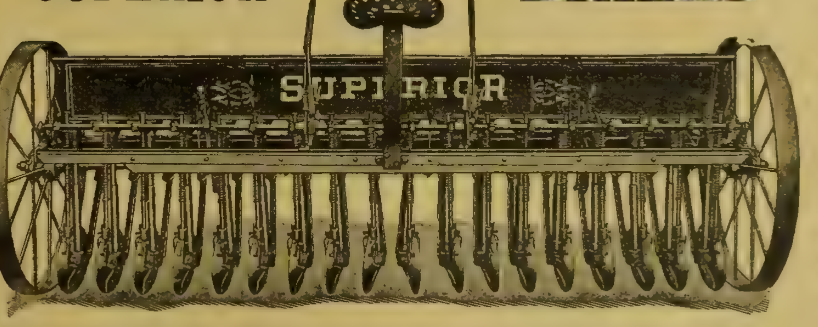

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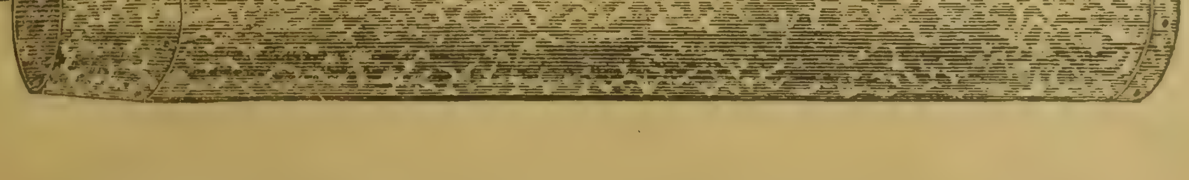

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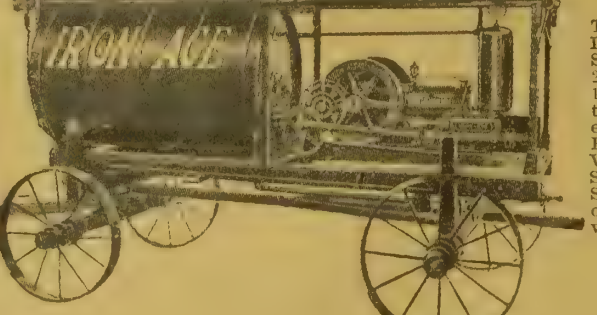
With an IRON AGE



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(Continued from Page 291)

2nd, Jas. McGillivray; Junior, Squaw Queen Johanna. Stanford University; Grand Champion, Inka Tritomia 2nd, Jas. McGillivray.

Jerseys: Senior Champion Bull, Rochette's ,Noble; Junior, Rochette's Noble Fountain; Grand Champion Bull, Rochette's Noble; Senior Champion Cow, Imp's Brilliant Spray; Junior Champion Cow, Noble Peer's Jewell; Grand Champion Cow, Noble Peer's Jewell, all owned by C. P. Hembree.

Guernseys: Senior Champion Bull, Tungsten, W. H. Saylor; Junior, Wanggen Vista, Dr. W. J. Henderson; Grand Champion Bull, Tungsten, Saylor; Senior Champion Cow, Imp, Julia's Maid 4th of Baulieu, Saylor; Junior, Princess Sequel, Elliott-Brant; Grand Champion Cow, Princess Sequel, Elliott-Brant Rancho.

Dutch Belted: Senior Champion Bull, Hepsey's Hummer; Junior Champion Bull, Imperator; Grand Champion Bull, Hepsey's Hummer; Senior Champion Cow, Princess Elaine; Junior Champion Cow; Mistletoe; Grand Champion Cow, Princess Elaine, all owned by Mrs. U. G. Strader.

Sheep.

Rambouillets: Champion Ram, A. A. Wood & Son.

Shropshires: Champion Ram, Bishop Bros.; Champion Ewe, Bishop Bros.

Hampshires: Champion Ram, Champion Ewe, both by University of California.

Southdowns: Champion Ewe, University of California.

Dorset Horns: Champion Ram, Champion Ewe, both by T. S. Glide.

Fat Sheep: Champion Wether, Middle Wool; Grand Champion Wether, both owned by University of California.

Goats.

Champion Buck: Kid Devlin, W. Howland; Grand Champion Doe, Winthrop Howland.

Swine.

Berkshire: Champion Boar, Improver B., Oak Grove Farm; Champion Sow, Robin's Ruby, F. W. White; Champion Boar, bred by exhibitor, Panama Lee, C. W. Barrows.

Duroc Jerseys: Champion Boar, bred by exhibitor, King Cole, University of California; Champion Sow, Lamb's American Beauty, Elmer Lamb; Sow, any age, bred by exhibitor, Ceres, Elmer Lamb.

Yorkshires: Champion Boar, Capt. of U. F., University of California; Champion Sow, Unilola of University Farm, University of California.

Poland China: Champion Boar, King's Wonder, W. F. Bernstein; Boar, any age, bred by exhibitor, King's Wonder, Bernstein; Champion Sow, any age, Candy Kid, W. Bernstein; Champion Sow, bred by exhibitor, Banker's Lady, M. Bassett.

Chester Whites: Champion Boar, California Dandy, University of California; Boar, any age, bred by exhibitor, Dodo, C. B. Cunningham; Champion Sow, any age, Star Vino, C. B. Cunningham.

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Percherons—State Class.

Stallions, four years or over—1, Ithos, M. Bassett; 2, Jacquard, Whitehall Estate. Three years and under four—1, Londricitos, Whitehall Estate; 2, Loquace, C. J. Albrecht. Two years and under three—1, Mordu, C. G. Albrecht; 2, Insurance, H. G. Learned; 3, Buster, C. A. Penniger. One year and under two—1, Star, C. A. Penniger; 2, Marvel, Edmund Miller; 3, Ebro, Elliott-Brant. Mares, four years and over, and foal at feet—1, Kate and foal, M. G. Learned; 2, Copula and foal, Wm. Bond. Four years or over—1, Fritzie, C. A. Penniger; 2, Pink Julia, H. G. Learned; 3, Kamiche, M. Bassett. Mares, three years and under four—1, Como, Ruby & Bowers; 2, Lili, Whitehall Estate. Two years and under three—1, Marie, Ruby & Bowers; 2, Miss Inquiet, Wm. Bond. One year and under two—1, Patty, H. G. Learned. Foals under one—1, Bay Boy, H. G. Learned; 2, Copula's Colt, Wm. Bond. Get of Sire, four animals under four years—1, Get of Inimitable, G. A. Penniger.

Belgians.

Free for All—Stallions four years or over—1, Vulcain de la Cabocherie, G. J. Luhrsen; 2, Champaigne, A. L. Watson.

Clydesdales.

Free for All—Mares, four years or over, with foal at feet—1, Florence Lynn and foal, Ruby & Bowers. Mares four years or over—1, Lady March, O. H. Brant; 2, Roseleaf, Ruby & Bowers. Foals, stallion or filly, under one year—1, Trilby, Ruby & Bowers; 2, 293-A; 3, stallion colt, O. H. Brant.

Shires.

Free for All—Stallions four years or over—1, Harboro Combination, Henry Wheatley; 2, Severn Pilot, McCormick Brothers; 3, Botolph King John, Henry Wheatley. Two years and under three—1, Salvador Forest King, Henry Wheatley; 2, Severn Donald, McCormick Brothers. Mares four years old or over, and foal at feet—1, Violet and foal, Henry Wheatley; 2, Mellington Princess and foal, Henry Wheatley. Mares four years or over—1, Lady Redlynch, Henry Wheatley. Mares, one year and under two—1, Salvador Queen, Henry Wheatley; 2, Salvador Champion Princess, Henry Wheatley. Foal under one year—1, Filly foal, Henry Wheatley; 2, Stallion foal, Henry Wheatley; 3, Stallion foal, Henry Wheatley. Produce of Dam—1, Produce of Violet, Henry Wheatley; 2, Produce of Mellington Princess, Henry Wheatley.

Shires, State Class.

Stallions, four years or over—1, Harboro Combination, Henry Wheatley; 2, Severn Pilot, McCormick Brothers; 3, Desford Banker, Henry Wheatley. Stallions, two years and under three—1, Salvador Forest King, Henry Wheatley; 2, Severn Donald, McCormick Brothers. Mares, four years or over, and foal at feet—1, Violet and foal, Henry Wheatley; 2, Mellington Princess and foal, Henry Wheatley. Four years and over—1, Lady Redlynch, Henry Wheatley. One year and under two—1, Salvador Queen, Henry Wheatley; 2, Salvador Champion Princess, Henry Wheatley. Foals under one year—1, Filly foal, Henry Wheatley; 2, Boro Mayflower's foal, E. W. Westgate; 3, Stallion foal, Henry Wheatley. Produce of dam, two animals under four years—1, Produce of Violet, Henry Wheatley; 2, Produce of Mellington Princess, Henry Wheatley.

BEEF CATTLE

Shorthorns

Bulls, three or over—1, Ringleader, T. B. Gibson; 2, College Count, 3d, Howward. Bulls, two and under three—1, Greenwood King, T. S. Glide; 1, Hillcrest 9th, T. S. Glide; 2, Fond Lavender, Howard, Bulls, junior yearling—1, College Count 20th, Howard.—Bull, senior calf—1, Mysie's Knight, T. S. Glide; 2, Roselawn Choice 81st, T. B. Gibson; 3, Hopland Tom, Hopland; 4, Roselawn Prince 82d, T. B. Gibson; 5, Harvardian, Howard Cattle Co. Bull, junior calves—1, Lancaster, King, T. S. Glide; 2, Winsome Prince, Howard; 3, Roselawn Favorite 84th, T. R. Gibson; 4, Hopland Master, Hopland; 5, Promise, Howard. Cows, three years old or over—1, Greenwood Maid, T. B. Gibson; 2, Little Missus 5th, Howard; 3, Flower Girl 14th, T. S. Glide. Cows, two and under—1, Lady Perfection, T. S. Glide; 2, Roselawn Queen 56th, T. B. Gibson; 3, Winsome Countess, Howard. Cows, senior yearling—1, Mary Lancaster, T. S. Glide; 3, Little Missus 7th, Howard; 3, Blossom Countess, Howard. Cows, junior yearling—1, Snow Girl's Queen, Hopland; 2, Spicy Maid, T. S. Glide; 3, Eigitha's Queen, Hopland. Senior Calves—1, September Morn, T. S. Glide; 2, Hopland Lass, Hopland; 3, King's Lassie, T. S. Glide; 4, Ringleader's Violet 74th, T. B. Gibson; Roselawn Daisy 73d, T. B. Gibson. Junior calves—1, Hillcrest Countess, T. S. Glide; 2, Ramona Miss, Howard; 3, Hopland Gay Lass, Hopland; 4, Ringleader's Beauty, T. B. Gibson; 5, Roselawn Belle 77, T. B. Gibson. Shorthorn Aged Herd—1, One Entry, T. S. Glide; 2, Aged Herd, T. B. Gibson; 3, Aged Herd, Howard. Shorthorn Breeder's Young Herd—1, One Entry, T. S. Glide; 2, One Entry, Hopland; 3, One Entry, Howard. Calf Herd—1, One Entry, T. S. Glide; 2, One Entry No. 2, T. B. Gibson; 3, One Entry, Hopland. Group, four animals—1, Get of sire, T. S. Glide; 2, Get of sire, Hopland; 3, Get of sire No. 1, T. B. Gibson. Group, two animals either sex—1, Produce of dam No. 1, T. S. Glide; 2, Produce of dam No. 2, T. S. Glide; 3, Produce of dam No. 1, T. B. Gibson.

Shorthorns, State Class

Shorthorn Bulls, three or over—1, Ringleader, T. B. Gibson; 2, College Count 3d, Howard. Bulls, two and under three—1, Greenwood King, T. S. Glide. Bull, senior yearling—1, Hillcrest Knight, T. S. Glide; 2, Fond Lavender, Howard. Bull, junior yearling—1, College Count 20th, Howard. Bull, senior calf—1, Mysie's Knight, T. S. Glide; 2, Roselawn Choice 81st, T. B. Gibson; 3, Harvardian, Howard; 4, Roselawn Prince 2d, T. B. Gibson; 5, Collegiate, Howard. Bull, junior calf—1, Lancaster King, T. S. Glide; 2, Winsome Prince, Howard; 3, Roselawn Favorite 84th, T. B. Gibson; 4, Hopland Master, Hopland; 5, Promise, Howard. Cows, three or over—1, Greenwood Maid, T. B. Gibson; 2, Little Missus 5th, Howard; 3, Flower Girl 14th, T. S. Glide. Cows, two and under three—1, Lady Perfection, T. S. Glide; 2, Roselawn Queen 56th, T. B. Gibson; 3, Countess Churchill, Howard. Cows, senior yearling—1, Mary Lancaster, T. S. Glide; 3, Blossom Countess, Howard. Cows, junior yearling—1, Snow Girl's Queen, Hopland; 2, Spicy Maid, T. S. Glide; 3, Eigitha's Queen, Hopland. Cows, senior calf—1, September Morn, T. S. Glide; 2, Hopland Lass, Hopland; 3, King's Lassie, T. S. Glide; 4, Ringleader's Violet 74, T. B. Gibson; 5, Roselawn Daisy 72, T. B. Gibson. Cow, junior calf—1, Hillcrest Countess, T. S. Glide; 2, Ramona Miss Howard;

The upper picture in the series is of Forti, leader of the band, famous about the bay and in all northern California. Director Forti always remembers and plays the Dead March on Thursday morning just as the beef breeds pass the grandstand.

Tevis Paine, son of the secretary of the fair association, and all round useful man in leading parades, etc.

A. M. Henry, breeder of Poland Chinas, on left, and Dr. L. J. Belknap, a lover of the Jersey.

Mr. Daniels, a believer in the milking machine.

Going up. A crowd watching the baloon as the cable is played out to let the captive go up 2000 feet. The tower in background brilliantly illuminated every evening.

Manager Stearns of the Stanford University ranch at Vina, and Mr. Lettow of the Cultivator.

3, Hopland; Gay Lass, Hopland; 4, Ringleader's Beauty 81st, T. B. Gibson; 5, Roselawn Belle 77, T. B. Gibson. Aged herd, state class—1, Aged herd, T. S. Glide; 2, Aged herd, T. B. Gibson; 3, Aged herd, Howard. State class, breeders' young herd—1, Breeder's young herd, T. S. Glide; 2, breeder's young herd, Hopland, 3, breeder's young herd, Howard. Calf herd—1, calf herd, T. S. Glide; 2, calf herd No. 1, T. B. Gibson; 3, calf herd, Hopland. Group to consist of four animals, either sex—1, one entry, T. S. Glide; 2, get of sire, Hopland, 3, get of sire No. 2, T. B. Gibson. Two animals, either sex—1, one entry, T. S. Glide; 2, one entry, T. S. Glide; 3, produce of dam No. 1, T. B. Gibson.

Herefords

Bulls, three or over—1, Young Donald, Simon Newman Co. Bulls, two and under three—1, Hesiod Lad, Simon Newman Co. Bull, junior yearling—1, Newman's Crest, Simon Newman Co. Bull, senior calf—1, Donald's Signet, Simon Newman Co. Bull, junior calf—1, University Prince, University of California. Cows, three or over—1, Lenora B, Simon Newman Co.; 2, Sugar Plum, Simon Newman Co. Cows, two and under three—1, Mary Queen, Simon Newman Co. Junior yearling cow—1, Silver Fern, Simon Newman Co.; 2, Lenora C., Simon Newman Co. Cows, senior calf—1, Pearl Gem, Simon Newman Co. Cow, junior calf—1, Lenora D., Simon Newman Co. Hereford Aged herd—1, aged herd, Simon Newman Co. Breeder's young herd, Simon Newman Co. Calf herd—1, Calf herd, Simon Newman Co. Hereford group of four animals—1, Get of Young Donald, Simon Newman Co. Hereford group of two animals—1, Produce of Lenora B., Simon Newman Co.; 2, Produce of Pride of Humboldt 24, Simon Newman Co.

Red Polled

All awards to Reevy R. Cartwright.

Fat Cattle

Shorthorn Steer or Spayed Heifer—1, Snowball, U. of C.

Hereford Steer or Spayed Heifer—1, Chief Lad, Simon Newman Co. Hereford Steer or Spayed Heifer, one year and under two—1, Prince Donald, U. of C. Hereford Steer or Spayed Heifer, six months and under one year—1, California Hope, U. of C.

Aberdeen Angus Steer or Spayed Heifer, two years and under three—1, Thickset Boy, U. of C. Aberdeen Angus Steer or Spayed Heifer, one year and under two—1, Black Prince, U. of C.

Grades and Crosses, Steer or Spayed Heifer, two years and under three—1, Eddie, T. S. Glide. Steer or Spayed Heifer, one year and under two—1. Maxwell King, T. S. Glide. Steer or Spayed Heifer, six months and under one year—1, California Choice, U. of C.; 2, Ruddy, T. S. Glide; 3, Punch, T. S. Glide.

DAIRY CATTLE

Holstein-Friesian

Holstein-Friesian Bulls, three years old—1, Lorena Korndyke, A. W. Morris & Sons; 2, King of the Pontiacs 14th, Leland Stanford, Junior University; 3, Genesea Lad, Leland Stanford Junior University; 4, Korndyke Pietertje of Oakwood, James McGillivray; 5, Dutchland Colantha Sir Ormsby, Leland Stanford University. Bulls, two years and under three—1, Segis Pontiac De Kol Burke, Morris; 2, Lady Wander Pietertje De Kol, Dr. Ben Stetson; 3, King Korndyke Pontiac, A. W. Morris & Son; 4, Korndyke Pietertje Tritomia, James McGillivray Bull, senior yearling—1, Juliana De Kol King Segis, Morris; 2, Pure Gold Brookside Clothilde, Pure Gold Stock Farm; Canary Prince of the West Johanna, Leland Stanford Junior University; 4, Aralia Del Kol Pontiac Segis, Morris. Bull, junior yearling—1, Spotland Canary of Vina, Leland Stanford Stanford University; 2, Hartog Colantha Korndyke, James McGillivray; 3, Sir of the Canary Band, Stanford Univ.; 4, Sir Hans Korndyke, Jas. McGillivray. Bull, senior calf—1, Prince Juliana Walker, Morris; 2, Segis Creamcup Pontiac, Morris; 3, California Fidessa Korndyke, U. of C.; 4, King Stanislaus, Frank Hatch. Bull, junior calf—1, King Clyde Korndyke, Morris; 2, Sir Hengerveld Orlissa De Kol, Stanford Univ.; 3, Sir Segis Pontiac Mead, Morris; 4, Skylark Netherland Korndyke, Morris. Cow, four or over—1, Inka Tritomia 2d, Jas. McGillivray; 2, Aaggie Acme of Riverside, Morris; 3, Romeo Aaggie Louise, Jas. McGillivray; 4, Floa Bergsma Butter Girl, Morris; 5, Toma, Stanford Univ. Cows, three under four—1, Leda Gerben Alcartra 2d, Morris; 2, Boweda, Stanford Univ.; 3, Diotime Clyde Korndyke, Morris; 4, Helen Nye Skylark, Morris; 5, Canary Delphina, Stanford Univ. Cows, two years and under three—1, Jane Netherland Segis, Morris; 2, Cobossie Korndyke Queen De Kol, Morris; 3, Queen Segis Hengerveld of Norwood, Frank Hatch; 4, Canary Saltertia, Stanford Univ.; 5, Leda Hengerveld De Kol Korndyke, Morris. Senior yearling heifer—1, Margaret Terpstra Korndyke, Morris; 2, Inka Tritomia Maid, Jas. McGillivray; 3, Lady Hiske Walker, Morris; 4, Pearl Beets 2d, Morris; 5, Lady Pontiac Pauline of Vina, Stanford Univ. Junior yearling heifer—1, Squaw Queen Johanna, Stanford Univ.; 2, Princess Ledga Hartog Inka, Frank Hatch; 3, Ethel Riverside Pontiac, Morris; 4, Heifer, Jas. McGillivray; 5, Gracia Colantha Burke, Stanford Univ. Senior heifer calf—1, Modesto Portia Korndyke, Morris; 2, Dora Spofford Korndyke, Morris; 3, Princess Autun Cornucopia, Stanford Univ.; 4, Empress Parthenca Pontiac, Morris; 5, Heifer, Jas. McGillivray. Junior Heifer Calf—1, Durmelia Pontiac Korndyke, Stanford Univ.; 2, Velma Korndyke, Netherland, Morris; 4, Segis Contenta Pontiac, Morris; 5, Lady Pontiac May, Stanford Univ. Aged herd—1, A. W. Morris; 2, aged herd, Stanford Univ.; 3, A. W. Morris; 4, aged herd, Jas. McGillivray. Breeders' Young Herd—1, A. W. Morris; 2, Stanford Univ.; 3, A. W. Morris; 4, Jas. McGillivray. Calf herd—1 and 3, A. W. Morris; 2, Stanford Univ. Get of sire, four animals—1 and 2, A. W. Morris; 3, Get of Canary Johanna Victoria, Stanford Univ.; 4, Get of King of the Pontiacs 14th. Stanford Univ. Produce of Dam, two animals—1 and 3, A. W. Morris; 2, Produce of Granfur, Stanford Univ.

Jerseys.

Jersey Bulls, three or over—1, Rochettes's Noble, C. P. Hembree; 2, Altama Interest, Guy H. Miller; 3, Valet's King of Lockeford, N. H. Locke Co.; 4, Alva Lady's La Foss Boy, S. F. Williams; 5, Signor Bruce's Fox, W. J Hackett. Bulls, two years and under three—1, The Imp of Lockeford, J. B. & J. W. Thorp; 2, Pansy's Bertie Lad, D. F. Conant; 3, Weiland's Silver Marquis, W. W. Fisk; 4, Leda's Golden Laddie of Lockeford, N. H. Locke Co; 5, Norma's Gertie's Son of Lockeford, N. H. Locke Co. Bull, senior yearling—1, Undulata Prince, C. P. Hembree; 2, Lorna's Altama Interest, C. D. Haworth; 3, Maidkin's Fox, Jas. T. Miller; 4, Pearl's Silver Interest, G. H. Miller. Bull, Junior Yearling—1, Rochette's Noble Fountain, C. P. Hembree; 2, Foxy Laddie of Lockeford, N. H. Locke Co.; 3, Butler Boy, Jr., Rancho Dos Rios; 4, Rosebud's King of Lockeford, N. H. Locke Co.; 5, Girl's Noble Peer. C. B. Hembree. Bull senior calf—1, Rochette's Noble Pearl, C. P. Hembree; 2, California Peer, N. of C.; 3, Golden Marquis 2d, J. B. & J. E. Thorp; 4, Victoria's Lad R. S. M., D. F. Conant; 5, Inarita Pogis, Rancho Dos Rios. Junior bull calf—1, Noble's Golden Rochette, C. P. Hembree; 2, Brilliant Spray's Marquis, C. P. Hembree; 3, Olga Rhyme's King of Lockeford, N. H. Locke Company; 4, Oliera's Dron, Rancho Dos Rios; 5, Warder's Teddy Stake Pogis of Lucerne Farm, W. W. Fisk. Cows, four years old or over—1, Imp. Brilliant Spray, C. P. Hembree; 2, Amethyst of Venadera, G. H. Miller; 3, Lemola Bell, N. H. Locke Co.; 4, Salmuera, Rancho Dos Rios; 5, Paulas Golden Maid. Cow, three years and under four—1, Salome of Mossdale, J. B. & J. E. Thorp; 2, Valet's Golden Biddy of Lockeford, N. H. Locke; 3, Prince Bosnia, C. P. Hembree; 4, Gertie's Foxy Alene, N. H. Locke Co. Cow, two years old and under—1, Financial Prospect of Lockeford, N. H. Locke Co.; 2, Valet's Dairymaid of Lockeford, N. H. Locke Co.; 3, Lois of Valley View, W. W. Fisk; 4, Logrero's Regina, W. J. Hackett; 5, Stockwell's Birdie, C. P. Hembree. Jersey senior yearling heifer—1, Noble Peer's Golden Rupee, C. P. Hembree; 2, Mermaiden's Fern, U. of C.; 3, Valet's Fresno Lemola of Lockeford, N. H. Locke Co.; 4, Altama's Goldie, W. J. Hackett; 5, Valet's Violet of Lockeford, N. H. Locke Co. Jersey junior yearling heifer—1, Noble Peer's Jewel, C. P. Hembree; 2, Noble Peer's Violet, C. P. Hembree; 3, Champion's Figgis, Jas. A. Goodall; 4, Porilla, Rancho Dos Rios. Senior heifer calf—Noble's Aley, C. P. Hembree; 2, California Mermaiden, University of California; 3, Warder's Golden Lucy of Lucerne Farm, W. W. Fisk; 4, Pegajosa, Rancho Dos Rios; 5, Leonard Farm Foxy Girl, W. J. Hackett. Junior heifer calf—1, Mary Reusser, S. F. Williams; 2, Warder's Nugget of Lucerne Farm, W. W. Fisk; 3, Iberian's Heroine, C. P. Hembree; 4, Nadine of Mossdale, J. B. & J. E. Thorp; 5, Rochette's Juanette, C. P. Hembree. Jersey aged herd—1, C. P. Hembree; 2, J. B. and J. E. Thorp; 3, N. H. Locke. Young herd—1, C. P. Hembree; 2, N. H. Locke; 3, J. B. and J. E. Thorp. Jersey calf herd—1, C. P. Hembree; 2, N. H. Locke Co.; 3, Rancho Dos Rios. Get of sire—1, Get of Noble Pen, C. P. Hembree; 2, Get of Rochette's Noble, C. P. Hembree; 3, Get of Sire, N. H. Locke Co. Produce of Dam—1, Produce of Mermaiden's Fern, U. of C.; 2, Produce of Benedita of Venadera, J. B. & J. E. Thorp; 3, Produceof Dam, G. H. Miller.

Guernseys

Guernsey Bull, three years or over—1, Kitchener's Corona Boy, W. H. Leland; 2, [illegible] Rancho; 3, Imp. Raymond IV's Island, W. H. Saylor; 4, Polly's Glenwood, W. M. Leland. Bulls two and under three—1, Ingston Saylor; 2, Don Adonis, A. B. Humphrey; 3, [illegible] Boy, Lathrop; 4, Violet's [illegible], C. G. Lathrop; 5, [illegible] Raymond, [illegible] son [illegible] 1, Quinn's Kitchener Lad, C. G. Lathrop; 2, Prince Segis of Mayhews, A. B. Humphrey; 3, Sally's Pride of Alta Vista, C. G. Lathrop; 4, Edgewater's

(Continued on Page [illegible])

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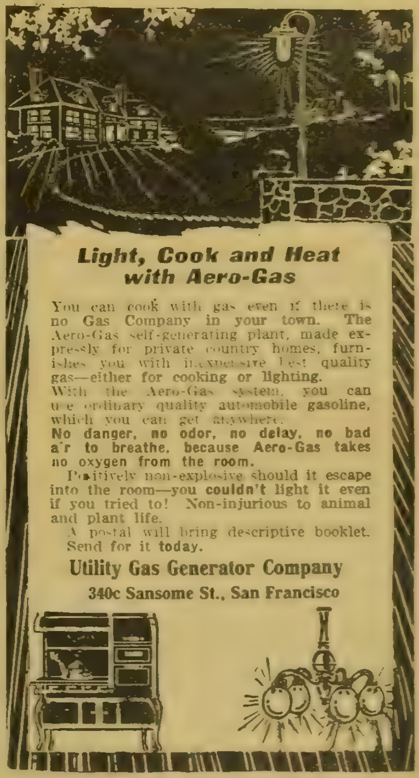

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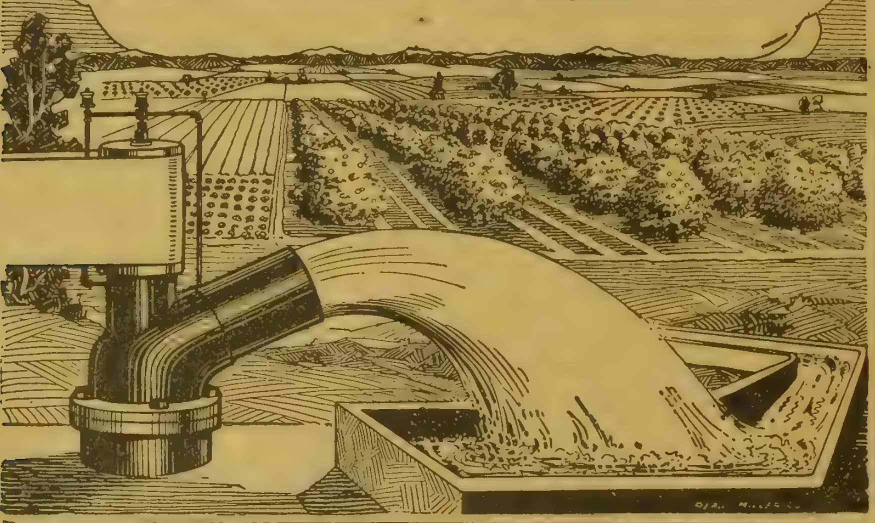

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Small Fruits and Vegetables

THE GOOSEBERRY IN CALIFORNIA

Written for California Cultivator

By E. C. Hall

The gooseberry is so well known it will need no description in a short farm paper article. It is of rare worth for sauce and the making of pies and in jam has a flavor unsurpassed. How well we remember the gooseberry pies our mothers used to make in the east, recollected when many other things are forgotten. So much for tribute to the gooseberry.

The gooseberry's natural environment is a rather shaded place, or northern slope, and on land that is called seepy, or on sub-irrigated land, but it can be grown on almost any good soil, preferably a sandy loam, as it will admit of irrigation without baking and settling so much as is the case on heavy soils, gives ease in cultivating, quick returns from fertilizers and retains moisture well.

Do not get the idea, though, that because I said almost any soil I meant almost any climate; California has many localities, especially the interior valleys and most of the southern part of the state, where they cannot be profitably grown, but in many places along the coast and localities around San Francisco bay, where the fog and cool moist air and breezes reach, they are profitably grown, and I am told they do well in some parts of the Sierra foothills, but before planting on a large scale I would advise going slowly until one finds out whether his locality is suited to the profitable raising of gooseberries. Then after finding out whether the gooseberry will grow and bear well, the next step is to find the variety that will do best in that locality, for the best is none too good. Bear in mind in this connecton that some varieties do well in some localities, while others do better in some other places; so it is the same old story, one must try out varieties that do best in their particular locality.

Here in Greenfield, Monterey County, in the Salinas valley we have the cool, moist air direct from the ocean, which counteracts the heat, so that we only have a very few days in the growing season—that is the fruit season—that might hurt the berries, and as the berries ripen, or rather get ready for the market early in the season, they are very apt to be marketed before much hot weather comes. Taken all in all, we consider that we have an almost ideal location as to soil, climate and irrigation facilities for the growing of some varieties of gooseberries; and being midway between two large cties of the state, we enjoy an advantage of marketing.

Planting.

On our irrigated land we commenced planting six by eight feet apart, 48 square feet to each bush, but now consider six by six feet, or rather five by seven feet better, as that gives more room to drive through one way. It greatly facilitates cultivation to plant so as to cultivate in both directions.

I mark the land one way, then stretch a wire crosswise and plant in each mark, using number 14 wire. In place of furrowing or marking one way, the wire can be made in links as long as one wishes to plant the bushes apart, or a piece of solder put on wire will answer the same purpose; any good plan of orchard or berry setting is all right, provided the rows are run straight. Plant early, prepare land as soon after rains commence as possible. If rains are late, irrigate. One bush set in January is worth usually two set in March or April; when set in early January they will not start growing right away, that is leaf out, but they will be sendng out those little white rootlets that feed the plant, then when it comes time for the leaves to come out and top growth to begin, just see the bushes grow, providing land has been well fertilized and well prepared and has sufficient moisture.

Manner of Planting

Choose a time when the soil is in proper condition to work nicely, not wet but moist. If top dirt is dry, throw it aside, dig hole about a foot across, make small mound in center of bottom of hole, as in setting orchard trees. Have bushes in a tub or bucket of water, take bushes out and cut off all long and mangled roots (a really more agreeable time to cut roots is before being put in tub), set bush directly over small mound with roots evenly distributed around hole; the mound helps to start roots in a downward direction; without the mound some of the ends of the roots will point upward, and as the gooseberry is naturally shallow rooted it is essential to encourage it to send its roots as deep as possible. Place moist soil around roots. When hole is two-thirds full press soil firmly. I press soil firm or less firm with my foot, according to condition of soil, then fill balance of hole with loose, mellow earth. Be careful not to let any clods or dry earth come in contact with the roots, as clods will let in the air and dry out the roots. Then do not water as is practiced when trees and bushes are set late in spring. I have set thousands of bushes this way and lost a very few. In this year's setting I did not lose any and not one was given any water except what was on roots as I took bush from tub.

When leaves begin to appear, if ground is dry, the plants should be irrigated; they should be kept growing thriftily through the spring, say up to July 1, then they will go without water if they are kept well cultivated and free from weeds.

Cultivation

Cultivation should begin a year or more before planting. The soil if not full of humus and very rich should be covered with strawy manure and preferably plowed when moist; if plowed under dry it should be thoroughly soaked by irrigation. Then plant to beans or potatoes. I prefer beans, as they add nitrogen to the soil, then by plowing deep next season and putting it in garden condition you are ready for planting.

After planting run a small-tooth cultivator through, or any tool that will cultivate shallow, and keep this up frequently enough to keep soil mellow and free from weeds. Be careful not to run too close to bush with cultivator unless running very shallow. Cultivate after each rain storm; do not let ground bake after a rain. I want to lay stress on keeping weeds down and out, not part of them, but every one. Gooseberries will grow and bear berries, with little or no care, but to reach the best results and profitable ones, care must be the watchword. I said cultivate shallow, but once a year some time in early winter the soil should be loosened up deep or else a so-called plow sole will form. This loosening up can be done with any orchard tool that can be run between the rows, provided it has long narrow teeth or shovels, called chisel cultivator teeth. In small berry gardens an old-fashioned double shovel plow with narrow teeth is all right; on large plantations larger tools suitable to the work will suggest themselves to the planter. In spring after vegetation has well started go around each bush with a push hoe or shovel and remove every weed, but while bushes are small a common hoe is all right. That is about all the hoeing they will need during the season, as the bushes soon spread out and cover the ground so that weeds and grass will not come up directly around the bushes to amount to anything after bushes leaf out. Propagating, pruning, spraying and marketing is another story.

Varieties

Of varieties there are many, but scores that are of no benefit to us; only a few have proven profitable from a money standpoint. I will only mention the best of those I have tested and such as have been recommended for a climate such as ours.

American kinds. The Downing is a popular variety where it does well. It is a large pale green or almost white berry, fairly upright grower and very hardy; can get along with very little water besides the winter rainfall; grows readily from cuttings.

Houghton and Josselyn or Red Jacket are two very hardy berries, slightly oblong and red when ripe; very similar, but Josselyn is the better flavored, Houghton the best bearer; they are both of drooping habit and do not sunburn.

Oregon Champion, later than Downing, originated in Oregon, is a hardy, upright grower and very prolific, needs more water than Downing, as it bears such immense crops; will not do well where it gets very hot; as it bears so full it does not have leaves enough to cover all the berries. It requires a cool moist atmosphere and if a north hillside is procurable and some shade, all the better, but here in Salinas Valley we have it out in the open, no shade and no north slope, and it does well; one of the best, if not the best, berry that has been tested in Greenfield. Two neighbors each have gooseberries similar to Oregon Champion (they do not know the name of them), that do very well here. Plants are six and seven years old and bear from eight to eleven pounds each. Oregon Champion set in the spring, if properly taken care of, will bear enough next year to pay all expenses and keep coming year by year.

English Varieties. I have only tested two so far. The May Duke is hardy and free from mildew, rather a slow grower, berries pale red and very large, later than Downing; does not sunburn much; brings good price.

Keepsake, pale green berry and of a delicious flavor, bears well, half drooping habit and hardy, free from mildew.

Crown Bob and Whitesmith are two English sorts highly recommended. The Berkeley, so highly recommended for some localities, is worthless here, and so is the Golden sold through here a few years ago at a high price, but of no account here, as it does not bear well enough. I have tested some other American sorts that are not worthy of mention.

TOMATO WORMS

Dr. A. W. Morrill, entomologist of the University of Arizona agricultural experiment station, writes as follows regarding worms in tomatoes:

In addition to cotton and corn this worm attacks a number of vegetables, including tomatoes and beans. It also occasionally breeds upon alfalfa. It is usually advisable to avoid planting tomatoes in fields planted in corn the previous season. Plowing the field in the fall and winter breaks up the pupal cells which are located in the ground, and is one of the most effective measures of control against the insect. In dealing with small gardens it would not, of course, make any material difference whether food plants for the boll worm have been grown on the same ground the previous year, since the insects will undoubtedly come in from the outside unless the garden is extremely isolated. It seems that comparatively little attention has been given to the prevention of injury to tomatoes by the boll worm. It is possible that corn planted so that it would be in silk during the time when the tomatoes are making their most profitable crop would help to protect the tomatoes. The moths would prefer to lay their eggs upon the fresh corn silks rather than on the tomatoes, giving the latter the advantage. Spraying the tomato plants is also recommended. Arsenate of lead at the rate of one ounce of the powder or two ounces of the paste should be used in each gallon of water. The spray may be conveniently applied by means of a knapsack, compressed air, or bucket sprayer, provided in either case with a suitable extension rod and nozzle. A three-foot piece of rubber hose, a three-foot aluminum extension rod, and a nozzle which will throw a spray at right angles to the extension rod makes the most satisfactory equipment for whichever one of the three types of garden sprayers you select.

OKRA

Written for California Cultivator

By D. F. Reichard

Hibiscus esculentus, a native of Southern Asia and grown in the warmer sections of the temperate zone.

Warmth, moisture and frostless months are important in raising okra. The seed will not germinate if planted in cold ground. In Southern California it is not safe to sow the seed much before April 1st, while in the northern part of the state two to four weeks later is proper. Since it takes okra four to five months of continuous warm weather to mature one should know his local climatic condition before venturing any considerable planting.

Okra requires fairly rich sandy loam soil, thoroughly soaked and worked before putting in the seed, which should be sowed where the plants are to grow as the young plants do not transplant easily. Okra should be planted in rows four to five feet apart and one foot apart in the row. The seed is usually sown in drills and the small plants thinned out to the desired distances. After the thinning and the plants are established, if the ground is not of a moist nature, it should be irrigated every 10 days or two weeks and thoroughly cultivated after each irrigation.

The young tender seed pods are used in various ways in cooking. White Velvet is the variety most used, but where the season is somewhat short the Dwarf Green is planted because it matures a little quicker.

DON'T SUMMER PRUNE RASPBERRIES

The practice of summer pruning followed in the eastern states does not seem to be well adapted to this plant when grown in the northwest. The vines grow tall, often reaching a height of seven to nine feet, and if cut back in early summer, will branch and send out good strong limbs. If pruned a little later in the summer the tendency is to cause the vines to winter kill and suffer to such an extent that the crop is greatly lessened the following year.

Tests along this line at the state college of Washington indicate that the best returns will be obtained by giving thorough, clean cultivation and doing all of the pruning in the winter time. All of the summer pruning done has resulted in injury to the plants. Some growers report fair success with summer pruning, but the general indications are that summer pruning will result in injury to the plants, while in a very few cases it resulted in a definite benefit to the plants or to the crop produced.

Where summer pruning is done the best system is to cut off the top bud when the vines reach the height desired. This will cause them to send out lateral branches. If the work is done early enough and the latter part of the season is dry enough, the side branches will mature and suffer very little winter injury, but if the work is not done early and the land dried sufficiently to stop growth, winter injury will result. Some patches have been practically killed by the late summer pruning.—O. M. Morris, Horticulturist.

The vegetable garden soil will need frequent hoeings; all clods and lumps should be well broken down and the hoe kept going constantly. After a watering, as soon as the soil becomes firm, a good hoeing is the means of conserving most of the water that has been given.

If your garden failed to do well this year, and you are not quite sure as to the cause of its failure, the chances are that most of the trouble was in the preparation of the soil, prior to planting the seed.

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A Journal of Horticulture and Agriculture

By

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S. J. SMITH

One of the oldest and best friends of the Cultivator and its readers has passed. S. J. Smith began business in Los Angeles manufacturing irrigation windmills about the time the California Cultivator began its existence. He used its columns to increase his sales. With the development of the gas engine he began handling that as a more satisfactory means of lifting irrigation water. The business of the company increased and it soon took the name of the S. J. Smith Machinery Company. A few years ago it was again enlarged and the concern became the Smith-Booth-Usher Company. A few months ago Mr. Smith disposed of the greater portion of his interests, though retaining sufficient stock to continue on the directorate. He then took up work with the Lambert Engine and Tractor Company, which concern began the construction at El Segundo of a large manufacturing plant for making tractors. Of this Mr. Smith was managing director. A few days ago an operation was performed at the Angelus hospital in the city of Los Angeles and he never rallied from the operation.

NEW SECRETARY

State Horticultural Commissioner Cook announces the appointment of E. J. Vosler, formerly assistant superintendent of the state insectary, to succeed E. O. Essig as secretary of the commission.

GOOD MONEY FOR WALNUTS

Before another issue of the Cultivator the walnut growers' association may have set the prices of the present season's output of walnuts. It is impossible to predict what the prices will be, for they will be more or less affected by war conditions. The whole situation is set out in an article written by Secretary Thorpe of the California Walnut Growers' Association and appearing on page 294 of this issue. European countries are holding everything in the nature of food, and it is reported that an embargo has been placed on the walnuts of France. But even had the embargo not been placed, it seems that it will be impossible for the nuts to be brought to the ports of shipment. So under these conditions California nuts will have practically the entire American market. If the embargo is lifted or shipping conditions improve, then France's product of practically 15,000 tons will come in competition with California's 9000 or at most 10,000 tons.

One feature of California's nuts this year is their exceptional quality. Last year's output was severely injured by the hot weather of late September. As the 1914 crop is already being gathered there is no possibility of injury to it.

BUY A BALE

The business men of St. Louis have started the movement to buy a bale of cotton and have written California commercial organizations urging support of the movement by taking subscriptions for bales of cotton. The California organizations, instead of supporting this movement to buy cotton from the southern growers, have decided, at least in one instance, that of the Los Angeles Chamber of Commerce, to encourage the buying so far as possible of Imperial Valley grown cotton.

Any one who may feel able to make a good investment in good property should write either the Los Angeles Chamber of Commerce or the Chamber of Commerce of the Imperial Valley at El Centro and send check for $50, which will buy one 500-pound bale of cotton at 10 cents per pound.

The surplus cotton of the United States amounts to about 3,000,000 bales. By surplus cotton we mean cotton which is shipped to foreign mills. This represents to cotton growers practically $150,000,000 at 10 cents per pound, the lack of which will bring untold suffering unless Americans who are able aid in financing the proposition. Let Californians increase the comfort of California cotton growers by buying a bale of cotton.

STATE FAIR

The Cultivator devotes considerable space to material regarding the state fair which closed in Sacramento last Saturday night. We are unable to give all the awards this week, but next week will continue them and give at least the awards in the swine classes. In the main the fair was exceptionally successful. The receipts were hardly up to last year's, though approaching them much more closely than anticipated the first day or two. Market conditions, together with the approaching expositions, perhaps influenced the attendance to a degree. The receipts last year were $48,112.20, with an additional $5500 from concessions. The total attendance was 101,000. Figures have not been tabulated this year, but it is thought the attendance will run somewhat under 100,000 and the total receipts in the neighborhood of $1000 or possibly $2000 under last year's, but as the expenses are lighter this year, the net receipts will be close to last year's, which were approximately $10,000 to the good after all expenses were paid.

The live stock parade was by long odds the finest ever made in California. There were more than 1000 head of stock in the Thursday parade, whose valuation by conservatives was in excess of a half million dollars.

It is presumed there will be no fair in 1915, that all the energies of the state will be centered on the great exposition. We say, presumably, though there is a possibility that nominally there must be a fair in order to comply with the law which stipulated that on a certain date a fair should be held every year thereafter.

There were many features at the fair deserving severe criticism, but that could hardly fail to be true of any great movement involving so many diverse interests. But we believe the management is honestly endeavoring to give to California what we have all appealed for many years, and that is a "for sure" agricultural fair which shall be representative of California's greatest industries.

FORTY-EIGHT VARIETIES.

Secretary of State Jordan has just completed the Forty-Eight Varieties, a 112-page book of extremely fine type giving text and argument for and against the proposed amendments to the constitution of the state and proposed statutes which will be voted upon by the electors of California on November 3. There are 48 separate measures. The first calls convention for the revision of the constitution. The second is an initiative amendment prohibiting the manufacture, sale, gift or transportation of intoxicating liquors. The third is the eight-hour law, and so on through the list. To simply name them would require more than a column in this paper.

We assume a copy of this book will be mailed to every voter in California, and we want to assure those who are readers of the Cultivator that they have no small task before them from now until election day to inform themselves on these measures. On the part of many there will be a temptation to ignore most of them. This will be a mistake, for every intelligent voter should inform himself fully and vote for or against every-one. So long as the initiative remains, the duty before us is to be worthy of the privilege, but from the great number of measures which have been passed up to the voters of California this year it is plain that some revision of the initiative and referendum is necessary. The percentage of voters required to place one of these measures on the ballot is altogether too small. Any legislation for which there is a crying need can secure enough signatures of voters if a much higher percentage than now is required and the state be freed from the necessity of considering so many measures sprung by faddists.

Agricultural News Notes

Shantung province in northeastern China is now raising cotton in considerable quantity.

The bean crop in Michigan is a week earlier than usual, and according to dealers is of better quality than usual.

A special committee of the Florida Citrus Exchange is considering the marketing of vegetables also the coming season.

$500 cash award is offered for the best district exhibit at the International Irrigation Congress, to be held at Calgary, Alberta, Canada, October 5 to 9.

Florida grapefruit will probably be ready for shipment the latter part of September. The total citrus shipments from that state for 1913-14 were 7,665,014 boxes.

Florida is strictly enforcing the acid test on grapefruit intended for shipment out of the state. Practically no fruit has yet been permitted to leave packing houses.

Approximately 3000 cars of wheat were tied up at Galveston, Texas, for several weeks on account of delay to export shipping by the outbreak of the European war.

The exports of Italian products to Argentine during 1913 were valued at $36,719,794. Cotton, wool and silk tissues, wine, olive oil, butter and cheese and paper and books are some of the principal articles shipped.

As a result of conferences among congressmen from nine cotton states, Senator Sheppard of Texas has sent requests to governors of those states to meet in Washington and discuss the question of curtailing next year's crop.

In addition to its work of carrying the troops, the Great Eastern Railway of England is converting its restaurant and kitchen cars into ambulances. The interior fittings are removed, and the interior arranged with ambulance materials, everything being done on the most approved principles.

It will be unlawful for any person, or association to ship between the states for the purposes of sale any seed or grain falsely labeled, or falsely represented as to grade, character or name, if a bill introduced by Representative William A. Cullop, of Indiana, becomes a law. The bill provides punishment by a fine of not less than $500 or by imprisonment for not more than one year.

An irrigation project covering more than 3,000,000 acres is located in Alberta, Canada. This is divided into three sections, one of which, some 83 miles from Calgary, now has installed 2500 miles of irrigating canals. Calgary will be the scene of the International Irrigation Congress, October 5 to 9. During the congress excursions free to delegates will be run to this great irrigation project.

Australian beef, which has gained in demand in the United States and especially in California of late, will be a scarce article within a short time because of the Australian government's announcement that exportation of foodstuffs to neutral and warring countries will be entirely stopped. Notification of the government's action has been made by Joseph Cook, prime minister, and it is assumed that Australia's beef, mutton, wheat and flour exports will go to England.

Agricultural News Notes of the Pacific Coast

Northern California

County Commissioner Stabler is making a campaign against Russian thistle.

Lodi shipped out 51 cars of Tokays Saturday. Prices are reported holding up well.

Prof. Lipman lectured before the San Joaquin County farm bureau at its last session.

Four hop kilns on the Horst ranch near Wheatland have been destroyed by fire. The cause is as yet a mystery.

Los Molinos hop ranch of Tehama County has completed hop picking. Much of the work was done by machine.

Sutter County's bean crop will be almost double that of any previous year. It is estimated at 12,500,00 pounds.

A total of 1700 cars of deciduous fruits is estimated as the season's shipments from Newcastle, Placer County.

Almond prices fixed by the Growers' Exchange are about two cents higher than those fixed the beginning of the season last year.

Penryn, Placer County, reports exceptionally heavy crop of olives some of which are already contracted for at $150 per ton.

W. S. Russell of Ottumwa, Iowa, has been appointed superintendent of the display and sales department of poultry at the Panama-Pacific Exposition.

The success of redwood sawdust packing for grapes has led fruit packers to try similar experiments with pears and plums, which have been equally successful.

Five hundred inmates of San Quentin are enrolled in the extension courses of the University of California. About half of these are taking agricultural courses.

The poultry show held in connection with the rice exposition at Gridley called out a large attendance of poultry fanciers. Nearly every class was well filled.

A very thorough campaign against pear blight has been conducted in Sacramento County by Horticultural Commissioner Kercheval. A tree to tree inspection has been made.

Judges for the California Apple Show to be held in San Francisco in October, are J. B. Olwell of Medford, Oregon, George E. Rowe of Grand Rapids, Michigan and Prof. C. I. Lewis of the Oregon experiment station.

A $400 prize for the cow yielding the highest average amount of butter fat at the Sacramento fair has been awarded to Gilbert Trigg, a Humboldt County dairyman; second place in the contest was also won by a Humboldt County cow.

At the last meeting of the Humboldt County dairymen's association much criticism was given to the proposed plan of sending boys from agricultural clubs on a trip to Washington, D. C. The point raised was that no one boy has accomplished enough to deserve such reward and that it is impossible excepting through favoritism to choose the candidates.

Central California

Kerman's alfalfa meal mill has begun grinding.

The price of cyanide has risen two cents more per pound.

Fresno District Fair will be held September 29-October 3.

Exeter expects to have a second cannery within a few months.

Rice culture on alkali lands of Kern County has proved a success.

An order for 100 tons of figs on a five-cent basis was recently received by a Fresno grower.

The Associated Raisin Company has asked growers not to deliver loose Muscatels until after October 1.

California's almond crop this year is estimated at 1700 tons. The association has fixed opening prices for the season.

Residents of the Terra Bella district of Tulare County are considering the establishment of a $1,000,000 irrigation district.

Onion growers of the Stockton district are much discouraged over the low prices of onions. Garlic, on the other hand, is selling high.

During the past week eastern concerns have placed orders in the Alta district of Tulare County for 100 tons of figs at a five-cent a pound rate.

The superintendent of the poultry department of the Fresno County fair to be held at Fresno September 29-October 3, expects an unusually fine exhibit.

Fresno County farmers are working to secure the appointment of a farm adviser. State Leader Crocheron has advised them that money is now available for two more county advisers for the state.

The California Wine Association has announced a $10 price to growers for grapes, none of this to be paid in cash. For each ton will be paid $5 in negotiable paper, bearing six per cent interest, and another five due April 1, 1915.

The annual meeting of the San Joaquin County farm bureau will be at the county court house at Stockton, October 24. Election of officers will be held. The bureau is discussing plans for securing tested alfalfa seed for its members.

The weather forecast service from the Fresno office to points in the San Joaquin Valley has been resumed. Where possible forecasts will be distributed over the telephone and special rain and frost warnings will be sent out in addition.

The California Farmers' Protective League held an enthusiastic meeting in Sacramento, Saturday, September 12. A regular plan of campaign was adopted and a director appointed to lead the work in the different counties. Arthur Dunn of Sacramento is secretary and manager of the league.

Fresno County growers are still pushing the proposition to send a $1,000,000 cargo of dried fruits and grain to Europe. It was stated in San Francisco recently that if the project went through California Britishers would pay for 1,000,000 cartons of raisins to be sent to England to be used as food for the soldiers.

Southern California

The walnut harvest is at its height in the Whittier district.

Walnut growers of the Hemet Valley are planning to organize.

Five hundred cotton pickers will be needed to handle the crop in the Palo Verde Valley.

Great preparations are making for Ventura's County fair to be held the last of the month.

Farm Adviser Parker of Ventura County held a pruning demonstration at Sespe recently.

Railroad officials estimate the bean crop of Santa Barbara and Ventura Counties at 1,250,000 sacks.

The first carload of walnuts is reported as shipped out from Capistrano, Orange County, September 10.

Bean growers and threshers of Orange County have compromised on a price of 27½ cents per 100 pounds for threshing.

Carpinteria, Santa Barbara County, reports its walnut yield light this year but of higher quality than ever before.

The Egyptian cotton growers of the Imperial Valley met at Coachella on the 9th. It was decided that growers would pay two cents a pound for picking.

Twenty registered Guernsey cows have just been received on the Dupee dairy farm at Santee, San Diego County. The car of Guernseys came from Massachusetts.

Lima bean growers of Santa Barbara and Ventura Counties are disappointed in their crop. The cool weather has promoted heavy vine growth, but pods are scarce.

The Covina Valley Farmers' Club held its first fall meeting Saturday, the 19, and was addressed by B. H. Crocheron who is in charge of the county farm adviser movement in this state.

The bean harvest of the Carpinteria Valley of Santa Barbara County usually precedes the walnut harvest but this year the bean vines are still growing while the walnut harvest is half over.

The department of agriculture, as the result of recent research work in the sugar beet fields of Southern California, will establish permanent headquarters in Los Angeles next spring. The work will be in charge of E. C. Rittue.

Representatives of the different associations of walnut growers met in Los Angeles on the 10th and talked over prices, but no decision was reached. The general estimate of the total crop was that it would be 75 per cent of average.

Twenty thousand young acacia trees will be set out by the Southern Pacific along its tracks between Santa Barbara and San Luis Obispo. These trees are used because of their value as soil binders in anchoring the shifting sands.

The San Antonio Fruit Exchange has elected the following directors for the coming year: Fred Smith, president; D. C. Crookshank, vice-president; Dr. Vincent Baker, Frank P. Firey, L. E. Loveland, C. T. Naftel, E. C. Robinson, W. O. Fritz and M. A. St. Clair, directors.

The Coast

Oregon reports estimate that state's output of potatoes at far below normal.

Red spider has done considerable damage to the hop yards of Western Oregon.

The Western Washington Fair will be held at Puyallup. September 29-October. 4

The long drouth in the Northwest has finally broken with some damage to hops and tomatoes.

A movement is on foot to organize farmers of Maricopa County, Arizona, to secure a county farm adviser.

At the agricultural fair at Wheeler, Oregon, a magnificent display was made of 2500 dahlia plants in one collection.

Grain growers of the Northwest are anxious to sell wheat at present prices but find it impossible to get sufficient transportation facilities.

This is the week of the Spokane Interstate Fair, and so many entries of cattle have been made that it is impossible to provide shelter for all.

Poultry raisers of the Salt River Valley of Arizona have plans made to ship a carload of Thanksgiving chickens to California and another just before Christmas.

The Oregon Jersey Cattle club offers $200 to that member whose cow wins over all breeds of dairy cattle at the Oregon state fair to be held at Salem, September 18-October 3.

Arizona district fairs are to be held as follows: Graham County, September 24-26; Northern Arizona, at Prescott, October 15-17; Willcox, October 29-31; MacNeal, November 26.

Prof. G. W. Barnes, live stock farm adviser of the Arizona agricultural college, is making a tour of the live stock sections of the state. Prof. Stanley F. Morse, adviser on soils, is also visiting farmers.

The Fourth Pacific International Live Stock Exposition will be held at the Portland Union Stock Yards, North Portland, Oregon, commencing Monday, December 7, 1914, and continuing until Saturday, December 14, 1914.

The Mesilla Valley Fruit and Vegetable Growers' Association of New Mexico this year made its first carload shipments. The horticultural department of the state college cooperated with the association in directing, grading and packing operations.

The Phoenix Vegetable Growers' Association was recently organized. Lettuce will be the principal vegetable grown for shipping the coming season. Ernest Hall of Phoenix has been elected president and V. A. Leak, secretary-treasurer. The association expects to market vegetables from the Phoenix, Glendale and Chandler districts.

Old Club Foot, the most ferocious bear that ever roamed the Gila River country in Arizona, has been captured. Six bullet holes were found in the hide, but none even penetrated the fat. The hide alone weighed 250 pounds. The government offered a bounty of $400 on Club Foot and a number of purses were also offered by cattlemen.

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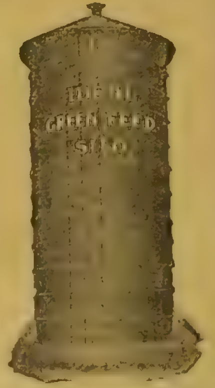

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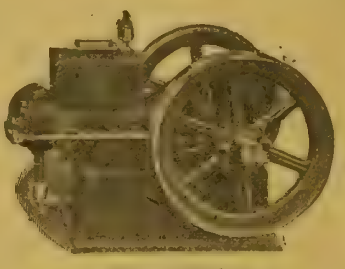

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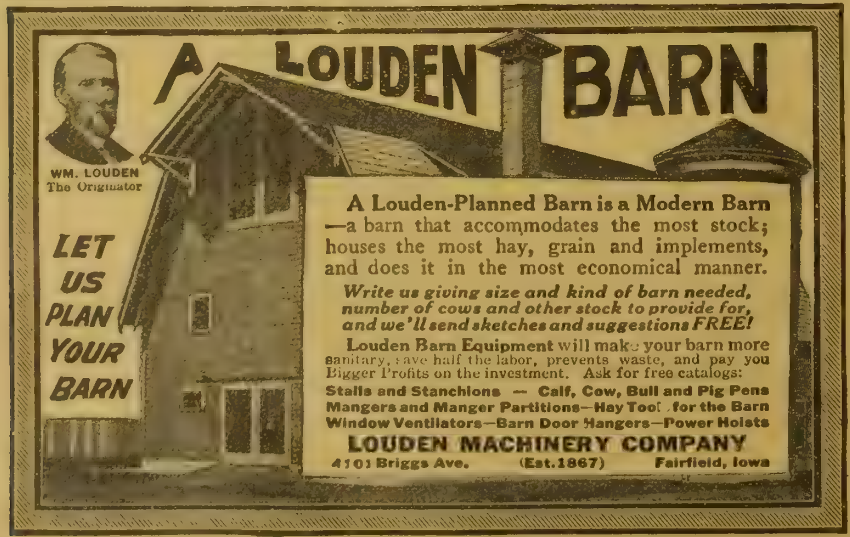

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Louden Barn Equipment will make your barn more sanitary, save half the labor, prevents waste, and pay you Bigger Profits on the investment. Ask for free catalogs:

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Live Stock and Dairy

BUTTER SCORING CONTEST

The bi-monthly butter scoring contest being conducted by the university farm at Davis was this time staged at the state fair. We have not yet received Prof. Leon M. Davis' comment, but we have all scores over 90, which are as follows:

J. N. Jensen, Cooperative Creamery, Visalia	94½
Ed. Shina, Crystal Butter Company, Sacramento	94
Peter Petersen, Valley Flower Creamery, Ferndale	93½
E. Brain, Sierra Valley Creamery, Loyalton	93½
Anders Jensen, Castroville Creamery, Castroville	93½
Christian Christensen, Kern County, Bakersfield	93½
W. Paulson, Siskiyou Creamery, Greenview	93½
V. Baciarini, Suisun Creamery, Suisun	93
Hans Beck, Danish Creamery, Fresno	93
J. V. Canham, Manchester Creamery, Manchester	93
Nels. Jensen, Kern County Creamery, Bakersfield	93
P. M. Becker, Grizzly Bluff Creamery, Grizzly Bluff	92½
A. Bergland, Sacramento Valley Milk & I. C. Co., Sacramento	92½
Carl Overgaard, Sierra Creamery, Madera	92½
Julius Madsen, Capital Creamery, Ferndale	92½
Simon Koppes, Montague Creamery, Montague	92
W. H. Gilbert, Dairy Delivery Company, Gustine	92
Glenn Decow, Mission Creamery, Perris	92
Blake & Son, Los Molinos Creamery, Los Molinos	91½
H. A. Milenz, Silver Crest Creamery, Sacramento	91½
E. O'Mara, Cooperative Creamery, Heber	91½
Peter Petersen, Live Oak Creamery, Gilroy	91½
M. Willing, Keyes Creamery, Keyes	91½
J. C. Phillips, Delta Creamery, Imperial	91½
F. C. Hyde, Tulare Cooperative Creamery, Tulare	90

DAIRY PRODUCTS AT THE STATE FAIR

Each year the number of entries exhibited in the dairy products department at the state fair increases. This year there were 41 entries of creamery butter and 37 entries of cheese, besides the exhibits in the market milk and cream and the display classes. With the exception of one entry of butter and four of cheese, all exhibits came from California factories or dairies. As a whole the products exhibited made a very creditable showing. Much of the butter was of good quality, few criticisms for the more disagreeable quality defects being made. The influence of workmanship on the score of butter and cheese was never pointed out better than at this scoring. In the butter exhibits, for example, faulty body was general, some few entries suffering heavy cuts. The score card for one particular entry shows that the butter workers' score was cut down by four points because of mechanical defects. With a critical market such butter would be sold under a sacrifice of several cents per pound.

The display of the dairy products in the large glass refrigerator which occupies the center of the dairy building was very showy and attracted the attention of the hundreds of visitors. In the dairy building is also located the working creamery, operated by the dairy division of the university farm. Here a few hundred pounds of butter was manufactured daily. The creamery is well equipped to handle the product in a commercial way. Along with the creamery there was a cooling demonstration carried on. Different types of milk and cream coolers were set up and in operation, and it was shown not only how to cool milk and cream, but why such should be done. All of these features were of interest to practical dairymen and creamerymen.

MILKING CONTEST AT STATE FAIR

Much interest was taken in the milking contest conducted during the entire state fair. Only Jerseys and Holsteins entered into this contest, but of these there were nine entries. There were three milkings each day, at five a. m., one p. m. and nine p. m. Results were as follows:

Aged Cows

Miss Blany, 337.3 lbs. milk, 13.352 lbs. of butterfat; Co Bossie Buttergirl, 300 lbs. milk, 9.808 lbs. butterfat; Aggie Acme, 269.6 lbs. milk, 9.683 lbs. butterfat; the above all owned by Morris; Goldie of Venadera, Guy Miller, 214.7 lbs. milk, 9.521 lbs. butterfat; Salumera, Watson, 209 lbs. milk, 8.467 lbs. butterfat; Philadelphia Marigold, Odell, 194.9 lbs. milk, 8.078 lbs. butterfat; Golden Tiny, Hackett, 180.3 lbs. milk, 7.316 lbs. butterfat; Marie's Lady, Hayworth, 144.1 lbs. milk, 6.056 lbs. butterfat.

Over 30 Months, Under Four Years

Queen Segis of Norwood, Hatch, 315.7 lbs. milk, 8.980 lbs. butterfat; Salome of Mossdale, Thorpe, 176.85 lbs. milk, 7.559 lbs. butterfat; Marie's Carnival, Hayworth, 166.6 lbs. milk, 7.503 lbs. butterfat.

Under 30 Months

Colossie K. Queen DeKol, Morris, 227.5 lbs. milk, 6.933 lbs. butterfat; Gladys of Venadera, Miller, 112.1 lbs. milk, 6.710 lbs. butterfat; Sweet Tips, Thorpe, 96.4 lbs. milk, 5.203 butterfat; Requeza, Watson, 101.4 lbs. milk, 5.048 butterfat.

CALIFORNIA HORSE BREEDERS

Members of the California Draft Horse Breeders' Association met in Sacramento during the recent state fair and discussed ways and means of increasing membership and interest in the association and in the industry of draft horse breeding. The association has been formed for some time, but the membership has been very small, notwithstanding many have been appealed to through circulars. Yet draft horses continue in great demand, and Pacific Coast users of such stock have been compelled to appeal to the east for a sufficient number to do our work. Means of securing new members were discussed at the meeting, and some thought one obstacle was the fee of five dollars heretofore charged for membership. After general discussion this was reduced to one dollar, and it was resolved that every horse breeder in the state should be appealed to to lend his influence to the association.

One suggestion to increase the interest in draft horses was the work horse parade, similar to that at one time held in San Francisco, and those frequently held in the larger cities of the east. Several expressed the opinion that during the exposition next year the greatest parade of horses ever made on the coast should be made, and in any case this association would be called upon to act as host to many visitors who will come purely because of the exhibits of draft horses which will be made. A committee consisting of the president, Professor True and Mr. Bassett was appointed to have charge of a campaign for securing members and to suggest means of increasing interest in the industry.

In addition to the work horse parade, a horse sale in various communities of the state was suggested. Such a movement would probably be supported by all stallion owners exclusively for sale of their stock, or it could be made general. First steps were taken toward having a general sale at the next annual meeting,

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IT HAS NO EQUAL

For the Human Body —It is penetrating, soothing and healing, and for all Old Sores, Bruises, or Wounds, Felons, Exterior Cancers, Boils Corns and Bunions CAUSTIC BALSAM has no equal as a Liniment.

We would say to all who buy it that it does not contain a particle of poisonous substance and therefore no harm can result from its external use. Persistent, thorough use will cure many old or chronic ailments and it can be used on any case that requires an outward application with perfect safety.

A Perfectly Safe and Reliable Remedy for
Sore Throat
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Sore Lungs
Rheumatism and all Stiff Joints

REMOVES THE SORENESS--STRENGTHENS MUSCLES
Cornhill, Tex.—"One bottle Caustic Balsam did my rheumatism more good than $120.00 paid in doctor's bills." OTTO A. BEYER.
Price $1.50 per bottle. Sold by druggists, or sent by us express prepaid. Write for Booklet R.
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LOSSES SURELY PREVENTED by Cutter's Blackleg Pills. Low-priced, fresh, reliable; preferred by Western stockmen, because they protect where other vaccines fail. Write for booklet and testimonials.
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Cutter's Blackleg Pill Injector 1.50
Discounts: 250 doses, 10 p. ct.; 500 doses, 20 p. ct.
Use any injector, but Cutter's simplest and strongest.
Every package dated, unused pills exchangeable for fresh after date on package. Do not use old vaccine (ours or any other), as it affords less protection than fresh.
Insist on Cutter's. If unobtainable, order direct.
Send check or M. O., we pay charges and ship promptly.
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The old reliable remedy you can depend on for Spavin, Curb, Splint, Ringbone or lameness. Thousands have proved it invaluable. Get a bottle from your druggist. Price per bottle $1. 6 for $5. "Treatise on the Horse" Free at druggist or from Dr. B. J. KENDALL CO., Enosburg Falls, Vt., U. S. A.

which, of course, will be held in San Francisco during the live stock exhibits. Henry Wheatley of Napa is president of the association and Professor J. I. Thompson of the university farm, Davis, is secretary and treasurer. The directors for the present year are E. W. Westgate, Rio Vista; Gordon H. True, Davis, and Dr. I. B. Dalziel, San Francisco.

RABIES

There is always so much excitement in a community where a rabid dog appears, or when anyone is bitten by a dog which is supposed to be mad, that many foolish things are done, and oftimes the case is so complicated that it is difficult to arrive at a correct diagnosis at any later time.

For instance, a man was bitten by a common house dog and pulled out a big six shooter and blew out the brains of the animal, rendering a certain diagnosis impossible.

No supposedly rabid dog should be killed if it is possible to confine him where he will not be a menace to the community. If the dog lives a week after biting a person, he was not rabid. This in itself is sufficient to make a person feel safe. If, however, the dog dies some days later after showing symptoms of rabies, then an examination of the brain by a competent pathologist is the only method of making a reliable diagnosis.

The head should be removed from the body, packed in ice for sending away. It is not feasible to attempt to remove the brain because of the danger of fatal inoculation from injury to the hands.—I. E. Newsom, Colorado Agricultural College.

GROW MORE BEEF

It seems that we may profitably grow more beef and pork when we consider that James Walker, farmer, of Scottville, Illinois, sold at Chicago, August 19, 1914, five cars of cattle (80 head) for $11,784.15, of which 47 steers averaging 1475 pounds, brought $10.60 per 100 pounds, or $154.45 per head, while 26 steers averaging 1378 pounds, brought $10.50 per 100 pounds, or $144.70 per head. These are the highest prices he ever received for such stock. Mr. Walker is 81 years old and has fed cattle and hogs for the Chicago market continuously for 52 years. Within this period he has sold the best cattle as low as $3.75 per 100 pounds and the best hogs at $2.50, and has seen corn selling at eight cents per bushel such as now brings eighty cents.

HANDLING SILAGE

One of the best bulletins we have seen on the handling of silage is No. 145 of the University of Nebraska. It has to do with almost everything from harvesting corn in the field to cutting, elevating and delivering to the stock. Anyone interested in pit silos should surely get it because it gives the most complete exposition of that method of handling we have seen.

INTERESTING TO DAIRYMEN

Conventions of especial interest to dairymen during the next few weeks will be the State Fair next week, at which dairy tests will have particular interest; the Fresno District Fair, beginning October 1; the Dairy Show at Modesto, October 14-15, and a public sale of registered Holsteins at Hanford, October 28th.

Cows will not give a steady, good flow of milk if they are worried by flies. They will get nervous and cause a lot of trouble. Here is a first-rate spray that can be used with great benefit: Fish oil, two quarts; kerosene, one quart; crude carbolic acid, one pint; oil of pennyroyal, one ounce; oil of tar, 10 ounces. Mix thoroughly and apply in a fine spray, every two or three days, or as often as the flies begin their attacks.

One of the main laws that underlie the breeding of good, healthy stock is maturity.

Be sure that your head saves your heels in farm work.

Increased Separator Efficiency

The best cream separators often fall below expectation simply because they are not properly lubricated. The separator is your most delicate farm machine. It demands an oil especially made to suit it.

Standard Hand Separator Oil

is just such an oil. It is made for separators and it is of just the right body to quickly reach those finely adjusted, close fitting bearings. It protects them from wear. It enables your separator to deliver *all* the butter fat. It eliminates unnecessary repairs and lengthens the life of your machine. There is no better oil made for your separator. Ask your dealer for it.

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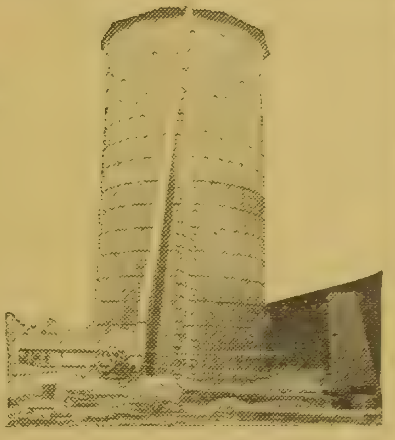
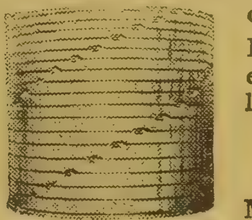
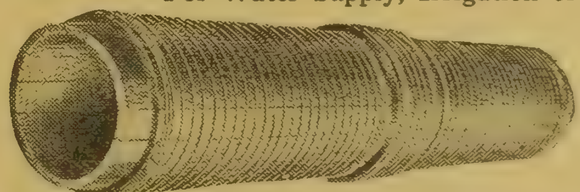
(California)







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WEANING PIGS

Written for California Cultivator

By Sacramento Valley Contributor

When should pigs be weaned? Is it a good plan to let the sows or the pigs do the weaning or should the pigs be separated from the sows? And at what age should the pigs be taken away from the sows?

These are questions that every thinking hog raiser must ask himself every time a litter of pigs gets past four weeks old.

The Cultivator would be glad to print the experiences and opinions of hog growers on this subject.

Ranchers
Dairymen
Fruit Growers
and Investors

ARE you looking for the BEST—absolutely THE BEST—conditions to be found in all California? Nothing like it anywhere in all the State. Read and reflect—then write us for further information and details.

WATER—Abundant and good GRAVITY irrigating and domestic water, ALL you want—WHEN you want it—AS you want it—ANY hour of day in the year at lowest possible cost (only the up-keep of ditches), averaging about 38c per acre per year. One-half miner's inch (about six acre feet) with every acre, from your own canal, with perpetual water right for every acre you buy.

SOIL—The richest, loamy, easily worked soil, containing abundant lime and phosphates, producing enormous crops of alfalfa, grains, fruits and vegetables. (We just cut 28 acres of alfalfa, yielding 132 tons, over 4½ tons per acre, at one cutting.) Level lands, but with enough grade to irrigate easily, that can be cleared and prepared for crops at low cost.

STOCK-RAISING—The fine quality of the alfalfa and grasses grown here, favorable climate, pure water, with mountain range for summer feed, guarantee to the stock raiser that perfection only obtained under most favorable conditions, and warrant the high prices that are obtained for Owens Valley grown cattle, hogs, horses and other stock. Hundreds of head of cattle are fattened here for market annually.

DAIRYING—Dairying in any country has long been recognized as a money-making occupation. Owens Valley, being exceptionally favored in the matter of bright, dry climate, pure water and fine feed, offers opportunities to the dairyman which few communities can boast. Before many years Owens Valley will be one of the banner dairying valleys of this State.

GOOD NEIGHBORS — Good Schools and Churches and Solid Banking Facilities and Positively the VERY BEST bona-fide Land Proposition in the State. Reasonable prices and terms.

BEST of bank and business references on request. We will demonstrate every statement to your satisfaction. You cannot afford to overlook this limited offer (only 55 forty-acre tracts in all), which is the new subdivision of one of the banner ranches of this State. Just placed on the market by responsible owners. Write, phone or call for further information and illustrated printed matter.

Owens Valley Land and Water Co.
G. M. Rea, Secretary,
Suite 630 H. W. Hellman Bldg.
Los Angeles, Cal.

As it appears to us the proposition is one of circumstances and conditions. If it is necessary to get as many pigs as possible from the sows in as short a time as possible, and plenty of skimmilk or buttermilk is available, along with soaked or new grain, alfalfa and refuse from the table, it is all right to wean pigs at six to eight weeks. If the feed ration is limited, and not too well suited to young pigs, they will make greater gains and mature more quickly if they are not weaned until 8 to 10 or even 12 weeks old. In the latter case the gain put on by the pigs getting their mother's milk, in addition to such feed as they may rustle, will undoubtedly amount to more value in dollars and cents than the gain in having the sows farrow a month or two earlier.

To grow the most pork for the time and feed expended should be the aim of every hog raiser. This makes it necessary to carry pigs from birth to maturity without shrink or setback. This makes it necessary to have the young pigs eating well and thriving before they are deprived of their mother's milk. They should be castrated at three or four weeks, so as to have this chance for shrinking over with while they will hardly notice it and while they are yet nursing.

In the hot weather in the interior valleys of California it is quite as important to have a clean mud "wallow" for young pigs as for older hogs, and at weaning time it is particularly important that they have this and shade and all of the other comforts.

Unless pigs have access to alfalfa in abundance so that there is no possible danger of constipation, it is well to pay especial attention to the condition of the bowels of young pigs at weaning time. An addition of a little oil meal to the ration helps to correct any tendency toward an irregular, feverish state.

Care and attention and the interest of a man who is a true stock grower and has the welfare of his charges deeply at heart count for more than all the rules or suggestions, however, and explain why pigs "do well" for one and not so well for another when all of the other conditions, except this care, are much the same.

Legal

Louis B. Stanton, attorney, 243 Wilcox Building, Los Angeles, will answer legal queries in this department.

Immediate mail replies cannot be given except where fee to Mr. Stanton is paid. When replies are wished in Cultivator address query to 115½ N. Broadway, Los Angeles.

Attachment of Stock

What is the proper procedure for attachment and sale of stock, the stock still being on pasture? — Subscriber, Wasco.

An attachment may be issued in the following manner: A complaint is filed, together with such bond of two sureties as a court may require; writ of attachment issued and delivered to constable, who in the case of stock would then take the stock into his possession and hold same to await the outcome of the suit, requiring the plaintiff in the action to indemnify him for the expense of feed and care.

Stock Killed in Pasture

A takes stock to pasture upon rented pasture. The stock trespass habitually upon adjacent unfenced land. One falls into an old well and is killed. Is A responsible for loss of animal?—Subscriber, Wasco.

Under the bare facts stated, it would come directly within the rule of recent supreme court case holding that the owner of the pasture is responsible for the loss of the animal.

Safety of Depositors

In case of bank failure has a depositor any insurance against loss? Is a national bank any safer than other banks? Is a savings account the same as a checking account so far as safety is concerned?—Subscriber, Thermal.

There is in this state no insurance of bank depositors. The history of bank failures has been that fewer national banks have failed than state banks. The stockholders of a national bank in case of failure may be required to pay in for the benefit of creditors an amount equal to the par value of the stock which they hold. There is no discrimination with respect to savings and checking accounts. Savings banks may invest their funds only in high grade securities, producing comparatively low interest, and cannot take the risk of loaning upon commercial paper; in so far they are safer than commercial banks.

E. A. Bridgford, exhibitor of a fine string of saddle horses.

Manager of De Laval exhibit ready to talk separators.

J. G. Stahl coming up a stretch during the parade.

C. G. Hines and R. V. Moore, judges of poultry and pigeon classes.

The judge of the hogs was a typical farmer and thorough going judge.

Prof. J. I. Thompson of the university farm, judging one of the horse classes, talking to V. F. Dolcini.

Who Pays?

A bought 10 acres of land and with it 10 shares of water stock in an incorporated pumping plant. A set trees, and before they were irrigated the pump broke, taking five days to repair. It was hot and A hired B to haul water to save the trees. Who should pay B for his work, A or the water company? — Subscriber, Alta Loma.

If it was not for the fact that when A became a stockholder of the water company he thereby assented to its articles of incorporation and by-laws, he could very probably require such company to repay him for the money expended to B, but it is undoubtedly true that the water company safeguards itself in its by-laws in respect to just such contingencies.

STOCK AWARDS

(Continued from Page 297)

Duke, C. G. Lathrop. Guernsey senior bull calf—1, New Grove King of Briar Bank, Elliott-Brant Rancho; 2, Mable's Kitchener Vista, J. W. Henderson; 3, Donaldo of Mayhews, A. B. Humphrey; 4, Tulip's Pride of Alta Vista, C. G. Lathrop; 5, Virgilia of Belle Vista, Dr. J. W. Henderson. Junior bull calf—1, Wanegan Vista, Dr. J. W. Henderson; 2, Butternut's Glendett of the Rancho; Elliott - Brant; 3, Mayhew's Truetype, A. B. Humphrey; 4, Royal Lee, A. B. Humphreys: 5, Gistana's Pride of Alta Vista, C. G. Lathrop. Cows, four years or over—1, Imp. Julia's Maid IV of Beaulien, W. H. Saylor; 2, Imp. Corona of Sea View Farm Second, C. G. Lathrop; 3, Butternut Queen, Elliott-Brant Rancho; 4, Virgilia of Palmhurst, J. W. Henderson; 5, Trisdalette, W. H. Saylor. Cow, three years and under four—1, Saylor's Dew Drop Gem, W. H. Saylor; 2, Berkshire Lassie, A. B. Humphrey; 3, Ida Lyons, Elliott-Brant Rancho; 4, Maid of Edgewater, Lathrop; 5, May's Glenwood Girl, Ed. E. Johnson. Cow, two years and under three—1, Saylor's Jewelette, W. H. Saylor; 2, Yeksa's Lella Boots, C. G. Lathrop; 3, Maybelle of Maple Lodge, Elliott-Brant; 4, Kitchener's Corona Less, C. G. Lathrop; 5, Raymond's Eighth Desire of Lewison, C. G. Lathrop. Senior yearling heifer—1, Princess Sequel, Elliott-Brant Rancho; 2, Lois Valentine's Lad's Lassie, Elliott-Brant Rancho; 3, Richmond's Corona Lad, C. G. Lathrop; 4, Walburga, A. B. Humphrey; 5, Saylor's Royaline of Paulsdale, W. H. Saylor. Junior yearling heifer—1, Saylor's Justine's Anita Sequel, W. H. Saylor; 2, Cotot's Petite, C. G. Lathrop; 3, Kitchener's Nell, C. G. Lathrop; 4, Princess Marzo, A. B. Humphrey; 5, France's Glenwood Girl, Ed. E. Johnson. Senior heifer calf—Alcena's Pride of Alta Vista, C. G. Lathrop; 2, Saylor's Primrose Sequel, W. H. Saylor; 3, Fortunata, Elliott-Brant Rancho; 4, Raymond's Lady Kitchener, C. G. Lathrop; 5, Saylor's Pansy Sequel, W. H. Saylor. Junior heifer calf—1, Violet's Corona Lass, C. G. Lathrop; 3, Junior heifer calf, E. E. Johnson; 4, Primrose of Alta Vista; 5, Mayhew Blossom. Guernsey aged herd—1, W. H. Saylor; 2, one entry, C. G. Lathrop; 3, one entry, A. B. Humphrey; —1, Get of Imp. Lord Kitchener, C. G. Lathrop; 2, Get of Gastletten, W. H. Eaylor; 3, Dr. J. W. Henderson. Produce of dam—1, C. G. Lathrop; 2, Produce of Trisdalette, W. H. Saylor; 3, Dr. J. W. Henderson; 4, Produce of Imp. Glen of Mono Marchie, C. G. Lathrop.

Dutch Belted

All awards to Mr. and Mrs. U. G. Strader.

Bees and Their Care

CONTAINER LAW

As a number of beekeepers have inquired as to the present status of the container we quote from the Western Honey Bee the correspondence of Mr. Blakeman, a California honey producer, with United States Attorney Schoonover. We first give Mr. Blakeman's letter which states the case, then Mr. Schoonover's reply:

"The federal act now in force, but whose penalties become effective September 3 next, which requires labels or stamps upon cans, bottles or parcels of food for human consumption, is perhaps not fully understood by shippers of honey and producers thereof who ship mostly by carload lots from this valley.

"We ship our honey in cases resembling very closely cases of coal oil, and, like them, containing two cans of five gallons each, and usually sold by weight. Will you kindly answer the following questions:

"Must each can bear a stamp or label, to be shipped interstate, or would such mark on the box do?

"Must the stamp or label give the net weight and also the word 'honey'?

"Can the producer avoid responsibility by selling here cases and cans of honey to be shipped in bulk by the carload, and would a penalty attach to the producer who filled the cans?

"Would a certificate of purity accompanying an unmarked shipment, fulfil the requirements of the law?"

* * *

"I have delayed answering your letter of the 2nd inst. until I could procure a copy of 'Regulations' of the secretary of the treasury, secretary of agriculture and secretary of commerce, adopted May 11, 1914, for marketing the quantity of food in package form.

"Your letter requests answer to the following questions:

"(1) Must each can bear a stamp or label in order to be shipped interstate, or would such mark on the box do?

"The answer to this is found in paragraph (a) of the regulation, of which a copy is enclosed, and which provides (except as otherwise provided by this regulation), that the quantity of the contents in all cases of food, if in package form, must be plainly and conspicuously marked, in terms of weight, measure or numerical count, on the outside of the covering or container usually delivered to consumers. The final consumer of your honey would receive the same, of course, in the can and not in the box, so the stamp or label must be put upon each can in order to be shipped interstate.

"(a) Except as otherwise provided by this resolution, the quantity of the contents, in all cases of food, if in package form, must be plainly and conspicuously marked, in terms of weight, measure, or numerical count, on the outside of the covering or container usually delivered to consumers.

"(2) Must the stamp or label give the net weight and also bear the name 'honey'?"

"The net weight must be given, as said paragraph (a) provides that the 'quantity of the contents, in all cases of food,' must be marked as provided. The label must also bear the name 'honey.'

"(3) Can a producer avoid responsibility by selling here unmarked cases or cans to be shipped in bulk by the carload, or would a penalty attach to the producer who filled the cans?

"The provisions of the regulation, copy of which is enclosed to you, become a part of the food and drugs act of June 30, 1906, and section 2 of that act reads in part as follows: 'And any person who shall ship or deliver for shipment . . . or offer to deliver to any other person, any such article so adulterated or misbranded within the meaning of this act . . . shall be guilty of a misdemeanor and for such offense shall be fined not exceeding $200 for the first offense; and upon conviction, for each subsequent offense not exceeding $300, or by imprisonment not exceeding one year, or both, in the discretion of the court?

"'Misbranding, within the meaning of the act,' would no doubt include failure to label the packages as required by the act.'

"In answer to your last question: 'Would a certificate of purity accompanying an unmarked shipment fulfil the requirements of the law?' will say that I know of no provisions by which such certificate would operate to avoid the necessity of labeling the packages of honey in the manner provided by these regulations of May 11, 1914."

* * *

The Western Honey Bee summarizes under the following points:

In case the United States pure food law is violated, the net container law of California becomes practically nonexistent. The offender is punished solely by the federal court, under United States law.

Illustration: The thief who violates California law by stealing from the post a money letter, goes before the United States judge—California laws are silent.

A purchaser after buying honey of a California producer may afterwards conclude to send it out of the state. The United States courts might rule that the said producer is liable for any subsequently discovered irregularities.

A few minutes' inspection of package foods in a grocery will show how to mark your honey cans, besides it will show how all other producers lead the honey men in obeying this beneficent law.

I find little trouble in putting just 60 pounds in every can.

Since March 3, 1913, we have violated this act every time our shipments have gone east. The penalties have been deferred by provision of the act itself until after September 3, 1914. How much longer time will suffice to end this neglect?

The net price of the A, B, C and X, Y, Z of Bee Culture (revised edition) is now $2.00. The Cultivator will be pleased to secure this excellent book for its readers at this price or in connection with a year's subscription to the Cultivator (either new or renewal) for $2.90 postpaid.

Tire Attacks

Which Goodyears are Best Fitted to Resist

The Fiercest Four

These are the four chief tire troubles:

Rim-Cuts Loose Treads
Blow-Outs Punctures

Note, for your own sake, how Goodyears meet them in ways exclusive to these tires.

Rim-cuts are impossible in Goodyear No-Rim-Cut tires. We control the way—the only feasible way—to prevent it.

Blow-outs—most of them—occur in weak spots, due to wrinkled fabric. We remove this cause by our "On-Air" cure, which no one else employs.

Loose treads are combated by a patent method, which creates in each tire hundreds of large rubber rivets.

Punctures and skidding are best met by our exclusive All-Weather tread. It is tough and double-thick. The grips are deep, sharp, resistless.

Yet the tread—flat and regular—runs as smoothly as plain treads.

No tire ever built offers one of these features save the Goodyear No-Rim-Cut tire.

It's Up to You

These things mean safety, strength, endurance. They mean maximum mileage and minimum trouble.

Getting them depends on you, for any dealer will supply you Goodyear tires. And at less than usual tire prices because of our mammoth output.

Countless men do get them, and tell other men to get them. More men now buy Goodyears than buy any other tire.

Please remember these things when you next buy tires. Don't trust to luck. Don't think that tires are much alike.

The only way to save tire troubles is to buy tires that combat them.

GOODYEAR
AKRON, OHIO
No-Rim-Cut Tires
With All-Weather Treads or Smooth

THE GOODYEAR TIRE & RUBBER COMPANY, AKRON, OHIO
Toronto, Canada London, England Mexico City, Mexico
DEALERS EVERYWHERE
Branches and Agencies in 103 Principal Cities
Write Us on Anything You Want in Rubber

(1866)

Profit in the Poultry Yard

AWARDS AT STATE FAIR

AMERICAN CLASS

Barred Plymouth Rocks—Ck 1, ckl 1, pullet 1, pen 1, Alfred D. Robinson; hen 1, W. H. Husband.

White Plymouth Rocks—Ck 1, ckl 1, hen 1, pullet 1, pen 1, Alfred A. Bamford.

Partridge Plymouth Rocks—Ck 1, Jas. Stansfield; ckl 1, hen 1, H. D. Armstrong; pullet 1, F. F. Woodward.

Silver Wyandottes—Ck 1, hen 1, Jas. Stansfield.

Golden Wyandottes—Ck 1, hen 1, Jas. Stansfield.

White Wyandottes—Ck 1, hen 1, Mr. and Mrs. W. Taylor; pullet 1, Mrs. R. S. Spaulding.

Black Wyandottes—Ck 1, hen 1, Jas. Stansfield.

Partridge Wyandottes—Ck 1, hen 1, Diablo Poultry Farm.

Silver Penciled Wyandottes—Ck 1, hen 1, Jas. Stansfield.

Single Comb R. I. Reds—Ck 1, ckl 1, hen 1, pullet 1, pen 1, Fowler & Masterson.

ASIATIC CLASS

Dark Brahmas—Ck 1, Jas. Stansfield; hen 1, Eaton & Hughes.

Partridge Cochins—Ck 1, hen 1, Jas. Stansfield.

Black Cochins—Ck 1, ckl 1, hen 1, pullet 1, J. Will Blackman.

Black Langshans—Ck 1, G. A. Janssen; ckl 1, C. E. Ross; hen 1, M. W. Nicholson; pullet 1, Eaton & Hughes.

White Langshans—Cock 1, hen 1, Jas. Stansfield.

MEDITERRANEAN CLASS

Single Comb Brown Leghorns—Ck 1, ckl 1, hen 1, pullet 1, Williams Bros. & Brace.

Single Comb Buff Leghorns—Ck 1, pullet 1, pen 1, G. L. Meadows; ckl 1, hen 1, Manuel Roberts.

Single Comb White Leghorns—Ck 1, ckl 1, hen 1, pullet 1, pen 1, Mrs. E. B. Martin.

Rose Comb Black Minorcas—Ck 1, Eaton & Hughes.

Single Comb Black Minorcas—Ck 1, hen 1, pen 1, Cameron Bros.; pullet 1, Mrs. R. S. Spaulding.

Single Comb Buff Minocas—Ck 1, ckl 1, hen 1, pullet 1, W. P. Williams.

Blue Andalusians—Ck 1, G. E. Thompson; pullet 1, H. Y. Thomas.

Single Comb Anconas—Ckl 1, hen 1, pullet 1, pen 1, Henry Raines.

Rose Comb Anconas—Ck 1, T. E. Silva.

ENGLISH CLASS

Buff Orpingtons—Pullet 1, Mrs. R. S. Spaulding; pen 1, Wallace Rutherford.

Black Orpingtons—Ck 1, hen 1, Eaton & Hughes.

White Orpingtons—Ckl 1, W. C. Baldwin; hen 1, W. J. McCamman.

DUTCH CLASS

Silver Spangled Hamburgs—Ck 1, hen 1, Jas. Stansfield.

Black Hamburgs—Ck 1, hen 1, Jas. Stansfield.

GAME CLASS

Parti-Colored Pit Game—Ck 1, Paul -aker.

Black Breasted Red Game—Ckl 1, J. R. Brook.

Dark Cornish—Ck 1, ckl 1, hen 1, pullet 1, B. P. Lausters.

Malay—Hen 1, T. H. Crispens.

GAME BANTAM CLASS

Black Breasted Red Game Bantams—Ck 1, ckl 1, hen 1, pen 1, A. J. Dixon; pullet 1, Dr. D. D. Davenport.

Golden Duckwing Game Bantams—Ck 1, A. J. Dixon.

Silver Duckwing Game Bantams—Ck 1, ckl 1, pullet 1, pen 1, W. J. Chedzey.

Red Pyle Game Bantams—Ck 1, hen 1, G. B. Nugent.

ORNAMENTAL BANTAM CLASS

Buff Cochin Bantams—Cock 1, H. R. Noack; ckl 1, pullet 1, A. Morse Bowles; hen 1, Eugene Hinds.

Black Cochin Bantams—Ck 1, hen 1, pullet 1, Eugene Hinds; ckl 1, J. W. Blackman.

White Cochin Bantams—Ck 1, hen 1, Eugene Hinds; ckl 1, pullet 1, J. W. Blackman.

Golden Sebright Bantams—Ck 1, pullet 1, Wm. A. French; Ckl 1, A. O. Hornung; hen 1, Lawrence A. Werly.

Silver Sebright Bantams—Ck 1, ckl 1, A. O. Hornung; hen 1, pullet 1, W. A. French.

MISCELLANEOUS

Rose Comb R. I. Whites—Hen 1, pullet 1, Mr. and Mrs. W. Taylor.

Golden Campine—Ckl 1, hen 1, pullet 1, J. Jackson.

Silver Campine—Ck 1, ckl 1, hen 1, W. J. McCamman.

TURKEYS

Bronze Turkeys—Old gobbler 1, Mrs. Wm. Bond; young gobbler 1, young hen 1, Eaton & Hughes; old hen 1, N. E. Mulich.

White Holland Turkeys—Old gobbler 1, old hen 1, Henry Sharp; young gobbler 1, young hen 1, Calla Grove Farm.

Black Turkeys—Old gobbler 1, Mrs. B. Hocking; young gobbler 1, young hen 1, Eaton & Hughes.

Bourbon Reds—Old gobbler 1, old hen 1, Mrs. B. Hocking.

DUCKS

Pekins—Old drake 1, old duck 1, Wm. A. French.

Rouen—Young drake 1, old drake 1, W. E. Ladd; old duck 1, young duck 1, W. A. French.

Black Cayuga—Old drake 1, young drake 1, old duck 1, Mr. and Mrs. M. H. Dewey.

Colored Muscovy—Young drake 1, young duck 1, F. F. Silva.

White Indian Runner—Old drake 1, old duck 1, young duck 1, Mrs. M. N. Peyton.

White and Fawn Indian Runner—Old drake 1, old duck 1, Wm. McGee.

Blue Swedish—Old drake 1, old duck 1, Mrs. F. Washburn.

GEESE

Toulouse—Pair 1, J. L. Maritzen.

SWEEPSTAKE PRIZES

American, English, Asiatic, Standard Games and Oriental—Best male, Partridge Wyandotte, Diablo Poultry Farm, Concord; second, S. C. Rhode Island Red, Fowler & Masterson, Duarte; best female, White Plymouth Rock, Albert A. Bamford, Gardena; second, White Plymouth Rock, Albert A. Bamford.

Mediterranean, Polish, Dutch and French—Best male, S. C. Brown Leghorn, Williams Bros. & Brace; second best male, S. C. White Leghorn, Mrs. E. B. Martin; best female, S. C. Brown Leghorn, Williams Bros. & Brace; second best female, S. C. Buff Leghorn, G. L. Meadows.

Bantams—Best game male, Golden Duckwing Game, A. J. Dixon; second, Black Breasted Red Game, A. J. Dixon; best game female, Black Breasted Red Game, A. J. Dixon; second, Black Breasted Red Game, A. J. Dixon; best ornamental male, Black Cochin, Eugene Hinds; second, Black Cochin, Albert O. Hornung; best ornamental female Black Cochin, Eugene Hinds; second, Buff Cochin, Eugene Hinds.

Ducks—Best pair, White Indian Runner, Mrs. M. N. Peyton.

Turkeys—Best pair, White Holland, Henry Sharp; special mention, Black Gobbler, Mrs. B. Hocking.

Geese—Best pair, Toulouse, J. L. Maritzen.

Largest and Best Display Standard Bred Poultry—First, J. Stansfield; second, Eaton & Hughes; third, A. J. Dixon.

POULTRY SHOW DATES

Riverside, Oct. 13-17, 1914, County Fair Poultry show, E. I. Hammond, secretary.

Anderson, Cal., Oct. 22-24, 1914, O. W. Dais, secretary.

Stockton, Cal., Oct. 28-31, 1914, W. H. Mackay, secretary.

Sacramento, Cal., Nov. 2-7, 1914, C. A. Wilkins, secretary, Sacramento, Cal.

Santa Cruz, Cal., Nov. 11-14, 1914 inclusive, E. J. Harran, secretary, Santa Cruz, Cal.

Petaluma, Cal., Nov. 11-16, 1914, Thomas McGuire, secretary.

San Mateo, Cal., Nov. 12-15, 1914, Fred West, show secretary, box 701, Burlingame.

Willows, Cal., Nov. 18-21, 1914, Otto F. Schuchard, secretary.

Oakland, Cal., Nov. 24-29, 1914, Chas. G. Hinds, secretary, 535 42nd street.

Pasadena, Cal., Dec. 1-5, 1914, M. D. Cartwright, secretary, Pasadena, Cal.

Modesto, Cal., Dec. 2-5, 1914, A. D. Roberts, secretary.

San Francisco, Cal., Dec. 8-13, 1914, inclusive, W. H. Ingram, secretary, Fruitvale, Cal.

Porterville, Cal., Dec. 15-17, 1914, A. D. Fawcett, secretary.

Phoenix, Ariz., Dec. 23-26, 1914, Arizona state show.

Newburg, Ore., Jan. 5-9, 1915, C. Duer, secretary.

Coeur d'Alene, Idaho, Jan. 6-9, 1915, O. A. Laaks, secretary.

Los Angeles, Cal., Jan. 6-12, 1915, Henry H. Mumford, secretary, Prospect avenue, South Pasadena, Cal.

Albany, Ore., Jan. 7-10, 1915, E. Schoel, secretary, Albany.

Tacoma, Wash., Dec. 29-Jan. 2, 1915, J. A. Caddey, secretary.

Increased Production

The standard of poultry living and profit can be preserved and greatly increased by feeding

Coulson's Egg Food

When you take up a handful of Coulson's Egg Food you scarcely realize that you are looking at a dozen or two dozen eggs. But such is the case. The hen utilizes this food in the production of her eggs. It gives her the elements out of which she manufactures her product.

Coulson's Egg Food is not a stimulant—it is a food, and as such acts as an AID to egg production.

By insisting on Coulson's Egg Food—by refusing substitutes—you will be paving the way for a good yield from your flock, and at the same time giving your birds the VERY BEST at no additional cost.

Send for our free book, "Chickens." It is intensely interesting and instructive.

COULSON COMPANY
Petaluma, California

WAR XTRA!

WAR! WAR! WAR! War to extermination is being waged right here in our Sunny California against lice and mites, by those powerful allies —Devil Dust and Lee's Lice Killer, and MORE WAR is being waged against disease of all kinds by that King of all poultry remedies—Germozone, and STILL MORE WAR is being waged against roup by that Peerless Remedy—Acme Roup Cure. But after all war comes—PEACE—and peace will come to you and success and contentment will be assured if you will use the triple entente of the food world—Peerless Scratch Food, Standard Egg Food, Lee's Egg Maker.

At all dealers or

PEERLESS POULTRY SUPPLY CO.
Main 867 409 East Third Street F 4437
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BEWARE OF IMITATIONS

Insist on Having
French's Poultry Mustard
Sold in Sealed Packages Only

French's Poultry Mustard is a scientifically manufactured article containing the flours of different mustard seeds so blended to produce the greatest strength in the volatile principle that is desired, and is required to produce the fortunate results arrived at by the users.

Germain Seed & Plant Co.
326 So. Main Street, Los Angeles

A teaspoonful to six to twelve fowls fed daily in dry or wet mash. Booklet for the asking.

Questions and Answers

THE EDITOR AND STAFF

Questions to be answered in this department should be received at this office one week before reply is expected. Write plainly on one side of the paper and sign full name and address. Unsigned communications receive no attention.

Feeding Value of Barley Bran

What is the feeding value of barley bran or hulls? I ground some barley fine and find by sifting a large portion of coarse bran. — Subscriber, Lakeside.

We think the hulls referred to have very little feeding value. In the poultry yard they would make excellent material in which to scatter grain for the hens to scratch in and if there is any food value the poultry will find it.

Orchard Trees Dying.

I enclose leaves and twig from plum, pear and cherry trees affected with some disease. Some of the trees have died, others are more or less affected. Most of the trees are healthy looking. The orchard was affected last year and the trees were sprayed, but did not spray this year.—Subscriber, Hughson.

The leaves show practically no fungus or other trouble, or at least not sufficient to cause death or serious injury to the tree. We take it the cause of the trouble is at the root, or at least some physical condition which the leaf does not show, other than that they were taken from unhealthy trees. In such a case we would ask a great many questions of the soil. Some of the leaves, especially those of the plums, have slightly the appearance of "little leaf."

Application of Bordeaux Paste.

In your issue of August 6 I have read with interest Mr. H. S. Fawcett's article on treatment of gummosis on citrus trees. I would like to ask if no other treatment of wounds is given after the application of the Bordeaux paste, also I would like to ask the best time of year for making such treatments. Can it be done during the fall and winter, when there is more time for such work?—D. M. E., Rialto.

Mr. Fawcett answers: "In regard to application of Bordeaux paste, I would say that when these wounds are of some size so that the wood is exposed to drying out and cracking, one of the best and cheapest coverings for this exposed wood is asphalt paint, the kind in which benzine has been used, not turpentine. This should be applied to the exposed wood only after the cut edges have begun to show new tissue indicating that the disease is cured, and should not be used to any extent on the live bark, although it will not materially injure the bark if it is allowed to get on the edges of it. This should not be used at the time of treatment for gummosis, but some time afterward, or say in the fall before the winter rains begin.

Stick Tight Fleas

I have been rubbing chickens' heads with warm lard and coal oil to rid them of stick tight fleas, and also sprinkled the runs with boiling water. I find that they still have them and would like to know of some dip, something that won't hurt the eyes. —Subscriber, Owensmouth.

No dip into which a bird could safely be put would be strong enough to kill these pests. Corrosive sublimate is the surest remedy, and that must be handled very carefully, for it is a deadly poison. You can get corrosive sublimate, diluted with alcohol, at any drug store, and apply it with an old tooth brush to any fleas you see on the heads or bodies of the chickens. It will kill the fleas instantly, but you must be very careful not to get it into the eyes or mouths of the birds or into your own. Of course the fleas will not stay off the chickens unless you get them out of the yards, and for this purpose strong salt water, used boiling hot, is better than the hot water alone. Use enough of it to wet house and yard thoroughly, and then hose the yards daily for several days so that the salt will soak well into the soil. In spraying the house see that you get into all the dark, dusty corners. If you have not whitewashed recently a good coat of whitewash will help to keep the house clean.

Feeding Barley to Poultry.

In feeding barley that is not well bearded to chickens does any harm result?—Subscriber, Lakeside.

A chicken's digestive apparatus can take care of almost anything small enough to go into the crop, but there is no nourishment in barley beards, and I see no reason why they should not cause impacted crop if they are eaten in sufficient quantities. If you will soak the barley 12 hours and then drain it 24 hours before feeding, and then as you feed take the trouble to crush it in the hands as you throw out each handful, you will find that most of the beards are broken off and what is left is so soft it can do no harm. Fowls do not like dry barley very well at the best and it should be made as palatable as possible.—J. A. K.

Potatoes for Planting

Where can I obtain potatoes for planting that are free from disease? —Subscriber, Fallbrook.

It would be hard to say where such potatoes could be secured, for there is no section where potatoes are produced commercially in any large quantity but that some form of trouble has appeared. The best procedure would be to secure seed as clean as possible, from a reliable grower, and insist upon having a certificate of inspection from the county horticultural commissioner or his deputy. Then in order to prevent scab as much as possible dip in corrosive sublimate or formaldehyde solution—two ounces of the corrosive sublimate in 15 gallons of water, or one ounce formalin in two gallons of water.

Eye Trouble

I have a chicken, the fourth this fall, with one eye swollen quite large. Chickens roost in the open air and have free run. They are R. I. Reds. Is it contagious and what can be done for it?—Subscriber, Gridley.

If you examine your chicken's eye I suspect you will find that a "sticker" or some bit of dry weed has lodged in it. At this season when every weed is dry chickens that have free range are quite likely to get into such trouble. The only thing to do is to remove the foreign substance and bathe the eye twice a day with a boric acid solution (one-half teaspoon boric acid to a cup of warm water) or witchhazel (one teaspoon to a cup of water). Whether you find anything in the eye or not, bathing with the boric solution will probably effect a cure.—J. A. K.

Bermuda in Lawn

We have a nice lawn of blue grass and clover. Have recently found a patch of Bermuda grass about 12 feet square growing in the lawn. Can you tell me how to exterminate the Bermuda grass?—Subscriber, Modesto.

We once had a lawn in which Bermuda got started. As we desired to keep it absolutely free from the pest, the sod for a depth of about three inches was cut off and taken away. The rest of the soil was screened to a depth of about six inches. The lawn was not a large one and this work was done at odd times, but it finally appeared that it would be almost an endless task. However, it succeeded; every spear of Bermuda roots was removed. If there is none other in this lawn than the small patch referred to, this procedure might be advisable. Raking the surface with a short garden rake—and keeping it up—tearing up the roots as much as possible, using putty knife or square pointed blade to cut out roots will keep down the pest, if the fight is persistently made. Always put in pinch of blue grass seed where weeds are killed out. But as the writer grows older he has decided not only to endure, but to have a certain affection for Bermuda grass. In this way we believe we can be much happier, for it is a never-ending fight to keep it entirely out of a blue grass lawn. We frequently have request for some chemical which will destroy Bermuda. There is none which will not at the same time destroy the more desirable plant, and the worst of the chemical proposition is that it destroys the soil as well as the plant, at least for a short time.

MONEY MAKING LITTLE LINERS

Inserted in These Columns Under a Classified Heading. A Clearing House for Our Many Thousands of Readers.

LINER RATES ARE 12c PER LINE PER ISSUE

No Ad Accepted for Less Than 36c Per Issue. Figure 8 Words to a Line.

MISCELLANEOUS.

Free for Six Months—My special offer to introduce my magazine "INVESTING FOR PROFIT." It is worth $10 a copy to anyone who has been getting poorer while the rich, richer. It demonstrates the REAL earning power of money, and shows how anyone, no matter how poor, CAN acquire riches. INVESTING FOR PROFIT is the only progressive financial journal published. It shows how $100 grows to $2200. Write NOW and I'll send it six months free. H. L. Barber, 430, 28 W. Jackson Blvd., Chicago.

ORCHARD HEATERS

I have 1500 unused No. 1 Troutman which will close out at 15 cents each, and about 2000 (used one season and exchanged for larger size) at price of 10 cents each. W. H. Fowler, Ontario, Cal.

For Sale—Four thousand feet 2½-inch fire hose; good condition. Also 15 H. P. Westinghouse motor in good condition. Very reasonable. B. Gold, 1109 E. 10th street, Los Angeles. Bway 5473.

For Exchange—Holt steam tractor, original cost $3000; steel road roller, large insilage chopper. Trade for auto equal value. Demmitt Company, 120 North Main street, Los Angeles, Cal.

For Rent—80 acres level land ½ mile from Delta, Utah. Small house, 4 wire fence. Free gravity water. Long lease to experienced farmer. Would exchange for California, Orange Co. preferred. H. E. Hunt, Anaheim, Cal.

"Smith's Pay the Freight"—To reduce the high cost of living, send for our Wholesale to Consumer Catalogue. Smith's Cash Store, 112 Clay St., San Francisco.

State, Indian and government land. Write for booklet. The California State Land Information Bureau, Sacramento.

LIVE STOCK

Ohio Improved Chester White—(O. I. C.); entire herd immunized against hog cholera. Nothing but immunized stock sent out. Few spring boars left. Few June gilts. One August litter will be ready to ship the middle of October. October farrows will be ready December first. Make reservations now for first choice. All stock first class in every respect. C. B. Cunningham, Mills, Sacramento County, California.

Grape Wild Farm Thoroughbreds—Guernsey Bulls of A. R. Breeding. BERKSHIRE HOGS. Finest herd in the state. All ages for sale. A. B. Humphrey, Proprietor, Mayhews, Sacramento Co., California.

Thoroughbred Berkshire Boars of all ages from developed and large-boned hogs. Riccomi Bros., Mountain View, Cal.

For Sale—Young registered Berkshire boars and sows; fine strong stock; boars ready for service. Stanislaus Ranch Co., Crows Landing, Calif.

Thoroughbred Duroc Jerseys for sale. Address Box 543 Lomita Rancho. San Jacinto, Cal.

Glenview Poland China—Stock for sale. Chas. B Hanna, R. F. D. No. 3, Riverside, Cal.

N. H. Locke Co., Lockeford, Cal.—Choice young Jersey bulls for sale.

SEEDS AND PLANTS

Grow Sudan Grass — The new forage crop — endures drouth, yields heavy, excellent in feeding value. Plants rogued and seed personally inspected by experiment station officials. The supply this year is limited. Seed one dollar per pound. B. D. Short Rhome, Tex.

For Sale—Avocado Seed, also avocado seedling trees large enough for budding this fall. Prices based on quantity desired. Address H. A. Phelps, Sherman, Cal.

For Sale—A limited amount of White Tepary beans 15c lb., 100 lb. lots at a reduction. Dr. Geo. P. Clements, Buena Vista Rancho, Riverside, Riverside Co., Cal.

Get Prices, plant now, Luther Burbank and Mediterranean Spineless Cactus Plantations. R. F. D. 35A, San Dimas, Cal.

Thornless Cactus Slabs for sale at 5 to 15 cents each. Chas. R. Hanna, R. D. No. 3, Riverside Cal.

RABBITS

For Sale—New Zealand rabbits, the best meat producers. Mature does and bucks, $2.50 to $5.00 each. A grand lot of fine, red, half-grown youngsters. One buck and three does, unrelated, $5.00. Your chance to get ta start of this splendid strain at small cost. Shipped anywhere. Standard Rabbitry, 1404 French St., Santa Ana, Cal.

New Zealand Reds—Prize stock, bucks and does; also thoroughbred Barred Rock eggs for hatching Mrs. C. Richey, R. D. No. 8, Box 557, Los Angeles, Cal.

New Zealand Reds—Scored and sold on merit. Investigate. Our catalog is free. Caldwell Bros., Los Angeles, Cal., Box 613.

HORTICULTURAL PRINTING

Catalogues for the seed and nursery trade. The live stock and poultry industries are a specialty with us. Two thousand illustrations to select from. Write for prices and samples. The Kruckeberg Press, 237 Franklin St., Los Angeles.

BEES

Bee Keeping pays big; price list bees, instruction books free, samples and prices pure California honey, ten cents. Spencer Apiaries Co., Box 14 Nordhoff, Cal.

MACHINERY

For Sale—Save [illegible] Guaranteed
[illegible] Windmills, Tanks
Pumps, Engines
Rams, Machinery
6 Gang Tractor [illegible] Plows, Harrows,
Cultivators
Drills, Seeders, Graders
Power Feed Chopper, Bone Grinder, [illegible] Mill Saw
Manufacture Galvanized Tanks
Save 30 Per Cent and Freight
1000 Gallon, $1[illegible], [illegible], $2[illegible]
100 Shovels, 15 cents, Picks, Mattocks, Post Hole Diggers, 50 Cents, Hay Rake Teeth, 100 [illegible]
Tons Pipe Fittings, 1 in. to 8 in.
Gates, 1 in to 8 in.
Vertical Pumps 2½ in. to 8 in., 40 Per Cent
Double Acting Ames Head, nearly new, $[illegible].00.
Cylinder Rods, all sizes, sundries too numerous to mention. Our prices absolutely cheapest good serviceable material can be produced for. Pioneers in our line. Call, write. Office DEMMITT COMPANY, 120 North Main, Los Angeles. [illegible], Broadway [illegible].

We have pumps, motors and engines of all sizes and for all conditions, which we will sell or rent. If you want a complete plant or any part, write us your needs and get our prices. Can give you special low price on engine and automobile oil, also belting. Machinery & Motor Exchange, 733-735 San Fernando street, 732-734 New High street, Los Angeles, Cal. Main 6382.

For Sale—Used and new gas engines, 2 H.p. up, rebuilt and fitted with modern equipment. 22 years' experience enables us to repair and rebuild gas engines correctly. Get our prices. Lloyd, 806 N. Main, Los Angeles.

POULTRY

How to Make Money—Mrs. A. Basley's latest Poultry Book is without exception the best ever written. The secret of how to raise every turkey hatched and the "Basley Formulas," now published for the first time, are worth many times the price of the book. The "Western Poultry Book" is a practical book by a practical woman. Price $1. Order from Cultivator Publishing Co.

Poultry Wanted—We pay the highest market price for all the local poultry we can get, no matter how large the quantity; also fresh ranch eggs. We remit immediately. National Poultry Co., successors to Allaway & Layton Co., 607 E. Third St., Los Angeles, Cal.

Baby Chicks—After Oct. 1st., White Minorcas, a very popular breed for all purposes. Golden Buff Leghorns—are fowls of beauty as well as heavy layers—all fall and winter chicks, $15.00 per 100; quality guaranteed. Sand Ridge Hatchery, Kerman, Cal.

Increase Your Heavy Layers—Introduce 230-egg type cockerels from trap-nested White Leghorns and get results. Four months old, 60 cents each. O. C. Hudson, R. D. No. 2, Escondido, Cal.

Barred Rock Cockerels—(Hawkins Royal Blue Strain) ready for mating, also Barred Rock, R. I. Red, Buff and White Orpington day-old chicks every week. Enoch Crews, Santa Cruz, Cal.

White and Columbian Wyandottes, Light Brahmas and S. C. White Leghorns. Over 30 years a breeder. Stock and eggs for sale. Michael K. Boyer, Hammonton, New Jersey.

We Have some fine Barred Rock Cockerels for sale at low prices, also a few Brown Leghorns cheap. G. L. Hawley, Madera, Cal.

Trap-Nested White Leghorns—Bargains in Cockerels from heavy layers. Only $1. A. R. Schroeder, Box C, San Gregorio, Cal.

Baby Chicks—White Leghorns, McFarland strain, Barred Rocks and R. I. Reds. Ship anywhere and guarantee safe arrival. J. W. Lyon, R. D. 1, Box 170, Gardena, Cal.

Barred Plymouth Rocks — "None better." Special prices for May and June. Write for 'em. C. H. Vodden, Los Gatos, Cal.

TREES.

For Sale—One and two-year-old Washington Navels and Valencia Orange Trees. Eureka Lemons and Marsh seedless grapefruit, for Spring 1914 delivery Write for prices, or call and examine stock at Morris Citrus Nurseries, Cor. Juanita and Valley Center, R. F. D., Box 34, San Dimas, Cal.

For Sale—50,000 Sour Orange seed bed stock, finest quality, or will let to responsible party on percentage basis; also 2000 A1 late Valencias, two years old next spring, or might exchange for Washington navels. H. H. Eshelman, Soldiers' Home, Cal.

Walnut Trees—Eureka and El Monte varieties a speciality, also Franquette and Plancentia. Write for prices and description of stock. Personal inspection invited. Eureka Walnut Nursery, Montebello, Cal.

The 1200-Acre Nursery, growers of 1500 varieties of trees and plants. OREGON NURSERY CO., Orenco, Oregon. Sales office, 522 Chamber Commerce, Los Angeles, Cal.

Snap—1200 budded lemon trees, ¾ in. diameter and up, $500 for quick sale. Address A. C. Wisegarver, San Fernando, Cal.

000 Avocado Seedlings—Pots, also can furnish nice plants, bare root, at low price. A. A. Quint, R. D No. 2, Pasadena, Cal.

For Sale—Eureka Walnut Trees, budded on Native Black Walnuts. Choice stock. Order immediately. Don't delay. Wm Holve, Fullerton, Cal.

Citrus Nurseries, Murphy Oil Company, East Whittier, California. Selected stock for sale; inspection invited.

You Future Nurserymen—Write for prices on special stocks of plants to start business with. Ballou's Nursery, Pasadena, Cal.

Budded Citrus Trees and seedlings at fair prices. Will take auto or land. Butler's Morning Side Nursery, P. O. Box 145, Lamanda Park, Cal.

FARM LANDS FOR SALE.

VICTORIA, AUSTRALIA, WANTS SETTLERS

Special inducements; government land, railways, two schools; cheap irrigation; 31 years to pay for farms adapted to alfalfa, corn, grains, fruit, etc.; climate like California, ample markets; reduced passages; special excursion being arranged. Free particulars from F. T. A. FRICKE, Government Representative from Victoria, 687 Market St., San Francisco, Cal., Box X.

Apple Orchards—Large and small, in the only apple producing section in California. The greatest section west of Missouri River. Write for booklet. Geo W. Sill & Co., Watsonville, Cal.

Ranches, homes, acres, lots, exchange; send for free list. Wilson Bros., Santa Cruz.

WANTED.

Wanted—Middle aged man experienced in all kinds of deciduous fruits, desires position as foreman on ranch. Moderate salary; best of references furnished. Address P. M. Y., 1611 So. Grand Ave., Los Angeles, Cal.

Wanted—By married man, position on ranch. Capable of doing any sort of ranch work. Experienced. Open after October 1st. Address, giving salary and sort of work, F. A. R., P.O. Box 567, Oakland, Cal.

Wanted—Steady position by expert in pruning and new style budding and grafting any kind of trees or roses. Work guaranteed—pay me after they grow. Mike Detore, 128 So. Los Angeles street, Los Angeles, Cal.

Wanted—Pullets—All ages and varieties, and laying hens for spot cash. Write us what you have, giving number, age and average weight. Pioneer Hatchery, 112 East 8th, Los Angeles, Cal.

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TEN Days FREE Send No MONEY
Beats Electric or Gasoline

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We don't ask you to pay us anything until you have used this wonderful new modern incandescent light in your home for 10 days, putting it to every possible test and then if you don't say that it is the greatest oil light that you have ever seen, or you are not thoroughly satisfied, you may send it back at our expense. You can't lose a penny. We want you to prove for yourself, as thousands upon thousands of others have, that the Aladdin has no equal; that it makes the ordinary oil lamp look like a candle; that it saves one-half on oil; that it beats electric, gasoline or acetylene; lights and is put out like old style oil lamp; burns common kerosene (coal oil) without odor, smoke or noise; is clean, won't explode, guaranteed.

We Will Give $1000.00 to any person who shows us an oil lamp equal to the new Aladdin (details of this reward offer given in our circular which will be sent you). Would we dare make such a strong challenge if there was any question about the superiority of the Aladdin over all other oil lamps?

Get One FREE We want one user in each locality to advertise the Aladdin. To that person we have a special introductory offer under which the one lamp is **given free.** Drop us a postal and we will give full particulars about this **unequaled offer on an unequaled light** and our **10 Day Free Trial.**

We Want Men With Rigs or Autos to Deliver the Aladdin on our easy plan. No previous experience necessary. Practically every farm home and small town home will buy after trying. One farmer who had never sold anything in his life before, writes: "I sold 51 lamps the first seven days." Another says: "I disposed of 34 lamps out of 31 calls." Thousands of others who are coining money endorse the Aladdin just as strongly.

No money required. We furnish capital to reliable men to get started. Ask for our distributor's plan, and learn how to make big money in unoccupied territory.

MANTLE LAMP COMPANY, 61 Aladdin Building, Portland, Ore.
Largest Manufacturers and Distributors of Kerosene Mantle Lamps in the World.

Saves Money— Makes Money!

You must be interested in these advantages of the remarkable "Steel King Plow." Does the work better, cheaper, and much more quickly.

STEEL KING MOTOR PLOW

Easy to drive, flexible as a motor car. Gets into all the close corners. Walks right along with plow, disc, harrow, seeder—

And it can also be used for sawing, pumping, running a silo—in fact, the Steel King is an all around farm machine.

1 man operates it
-does work of 8 horses
-at fuel cost of only 8c per acre!

Think what this means in your work. Can you afford to do your work by old-time methods when this splendid machine can be secured for $1050, f. o. b. Los Angeles? Write today for complete information—you need the Steel King NOW! A card will do.

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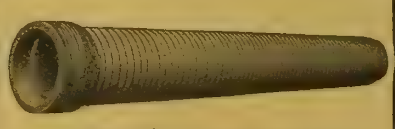

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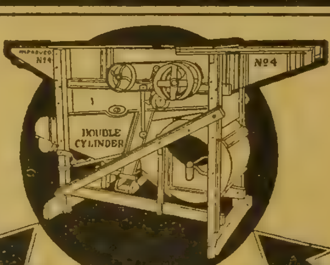

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of Beans and peas with a guaranteed Owens Thresher. All your seed separated and cleaned from the vines and pods without splitting. Pea and bean growing is the most profitable farming if handled right

OWENS DOUBLE CYLINDER Bean and Pea Thresher
— Made in 4 Sizes —

will pay for itself many times over in one season. Guaranteed not to split the seed and take all from the vines.

FREE BOOK

Send for our free book of valuable information about bean and pea culture. Illustrations and description of our machines. Facts and figures showing results obtained by users of our Hullers write today. Dept. 11.

J.L.Owens Co. 18 Cham. of Com. Bldg. Minneapolis, Minn.

When writing advertisers, mention The Cultivator.

Household Department

MAKIN' JELL.

I kind o' love these lazy-feelin' days
When Summer's gettin' dreamified and slow,
And fallin' into little whimmy ways
Becuz she's packin' up her duds to go,
But wonders if she hadn't better wait
Till Autumn comes and peeks inside the gate.

I love the mixed-up flavorin's that fly
About the door-yard, every which-a-way—
Of berry vines a-bakin' brown and dry,
And yeller sugar-cantaloupes, and hay,
And scenty weeds; and I do love the smell
Of b'ilin' grapes, when Susan's makin' jell.

It's jest this time o' Summer every year
That Susan takes for jam and jell and such,
When Concord grapes are plump and full and clear,
But still before they've ripened very much—
They ain't got purple yit, but every one
Is like a gold-red jewel in the sun.

They're best right then, she says, for makin' jell,
And when she's got the kitchen fire jest so,
She sets 'em on and lets 'em cook a spell—
Not b'ilin' hard, but gentle-like and slow,
Till all around the house and yard the air
Is full of grapey sweetness, everywhere.

That's when I love to set here, closte outside
The kitchen door, and smoke my corncob pipe
And watch the sky, so big and blue and wide,
And sniff the scent of things a gittin' ripe,
And listen to the "z-i-zz" of bumble bees
Among the velverettes and flower-peas.

And what I love the best of all's to know
Inside the kitchen, spandy-neat and clean,
That's Susan there, a steppin' to and fro—
Es chipper es a girl of seventeen—
And jest es sweet and pretty, seems to me,
Right now, es any girl I ever see.

It shorely is a dandy time o' year,
When Summer's sort o' flirtin' with the Fall,
And yit, I reckon that I wouldn't keer
A shuck for scenty weeds and fruit and all—
Ain't hardly anything I'd like es well,
If Susan wasn't 'round a-makin' jell.

—Harriet Whitney Durbin.

THE ROD OF GOLD.

Once upon a time an old woman, who had been walking through the wood, came at last to the open country beyond. Just before her flowed a stream which she must cross on her way. She seemed feeble, and, when the bank of the river was reached, she stopped in dread; for the current was swift and the stones were slippery and unsafe. She glanced about her at the trees, for she must have help. A great oak stood near with its beautiful leaves and many acorns. "Kind oak," said the old woman, "may I have part of one of your branches to make a rod to help me over the stream?"

"Indeed, no," cried the oak. "I cannot spare a single branch. My acorns are far too beautiful to give away."

Then the old woman went to a red maple near the oak, and said, "Will you be kind to me and spare me a branch from which I may make a staff to carry me over the river?"

"Of course not," said the maple. "Could you imagine I would spare any of my beautiful red leaves?"

The old woman turned sadly away. A chestnut tree stood near, and she appealed to it. "Good chestnut, may I have one of your branches?" she asked. But the chestnut tree could not spare a single nut, and so refused.

The sycamore thought her balls to pretty to part with, and the poplar stood tall and disagreeable and would not help her.

The elm drooped languidly, and told her she might ask the walnut. And so it went; hickory, ash, horse-chestnut, and birch tree all said, "No," till the poor woman, quite discouraged and tired out, sank on a great stone to rest and decide what was best to be done.

At her feet lay a stick, old and discolored, but straight and strong. It spoke to the old woman and said, "I'm sorry the beautiful trees have been so unkind to you, and I will help you gladly if I may. You see I have no beauty; I do not even know to what tree I belong; I have no acorns nor nuts nor leaves, and even my bark is gone; but I am strong, and will gladly take you over the stream."

The old woman picked up the poor rod at her feet, and, leaning heavily upon it, started on her journey across the river. The water roared about them, but the rod bore her in safety to the other side. When the farther bank was reached, a wonderful thing happened. The long cloak worn by the old woman fell away, and there she stood, not really an old woman at all, but a beautiful fairy. "I am the fairy of the woods, kind rod," she said. "I came to see if my trees were kind as well as beautiful. You have done all in your power for a feeble old woman. Now what can I do for you?"

The rod replied, "I should like to be beautiful, but most of all I want to be loved, especially by the children."

"You shall have your wish," said the fairy. "You are worth your weight in gold, but the rod of gold would not be loved by the little ones. I will give to you fairy gold instead."

She planted the rod in the earth, and it at once became green. From it grew beautiful leaves and many stems, and over all the fairy scattered millions of tiny stars of fairy gold till the top of the plant looked like sunshine. "Hereafter you shall be called 'Goldenrod,'" said the fairy, "and every one shall love you."

What the fairy has said has come to pass. The lovely goldenrod has been showing her yellow stars in our meadows ever since that day.—Sophia Brown, in "Christian Intelligencer."

CANNING WITHOUT SUGAR

If the price of sugar is prohibitive one may can peaches so that they will keep indefinitely by using plain water instead of syrup. The following recipe may be used:

Remove the skins from peaches by immersing in boiling water for about one minute, and then dipping in cold water. Place whole peaches in glass jars or tins and fill jars with hot water. Place rubber and top in place and sterilize for 15 minutes in hot-water-bath outfits, 12 minutes in water seal, 10 minutes at 5 pounds steam pressure, or 5 minutes at 10 pounds steam pressure.

Of course, the peaches when removed from the jar will not taste so sweet as those canned in syrup. However, if sweetening is desired, it may be added when the fruit is to be eaten.

This same method is good for canning with syrups containing varying amounts of sugar. A very thin syrup may be used if the housewife does not wish to dispense entirely with the sugar.

Apples may also be canned (for apple sauce, pie filling, etc.) using plain

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and Absolute Safety
for your Savings!

The SECURITY TRUST & SAVINGS BANK of Los Angeles is the oldest and largest savings bank in Southern California, with deposits totalling over Forty Million Dollars. More than 88,000 individuals claim it as their banking home, and of this number many transact all their banking business by mail. You can bank by mail with this big bank with every assurance of the same safety and satisfaction these 88,000 depositors now enjoy. Deposits can be mailed in the form of checks, drafts, money orders or currency in registered mail. Four per cent interest is paid on Term Savings Accounts. Write for full information regarding banking by mail.

SECURITY TRUST & SAVINGS BANK

Oldest and Largest Savings Bank in the Southwest.

SECURITY BUILDING
Fifth and Spring
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One of Our Houses

**LOOK AT THE ABOVE HOME
YOU CAN BUILD IT YOURSELF!**

Simply "follow our plans." They are simple and easy—anybody can do it. No building expense necessary—just your time and a hammer.
Here's the way—we furnish the lumber, trim, finish, doors, windows, paint, stain, nails, hardware, plaster or interior wall board—all numbered to fit the plans.
Follow the plans. You can't go wrong. The result—an economically built home, permanent, substantial and attractive. NOT a portable house. Satisfaction guaranteed.
Your own ideas carried out, if preferred. Plans for any sized house furnished. Send for illustrated catalogue. Write today.

Ready-Built House Co., 974 Broadway, Portland, Ore.

Eucalyptus Seeds

In large or small quantities, 40 species to select from. Write for free pamphlet, "Eucalyptus Culture." It tells you how to sow the seed, raise the plants and plant out in the field. Also describes all the leading kinds, gives their uses, etc.

Trial packets 15c each, 4 for 50c. Write for prices in quantity.

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345 So. Main St. Los Angeles

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LARGE HANDY
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BUCKET
AXLE & GREASE
SMALL
CAN
WHITTIER COBURN CO S F SOLE MFRS

water instead of a sugar syrup. Department specialists have repeatedly canned them by this method. In the case of apples, jars should be sterilized 16 minutes in hot-water-bath outfits, 12 minutes in water-seal, 10 minutes under 5 pounds of steam and 4 minutes under 10 pounds of steam."

TWO NEW ONES

Baked Oranges

Scrub clean with brush as many oranges as you wish to serve. Cut off top, loosen flesh from rind by running sharp knife around. Place in baking pan with water half way up on the oranges. Let boil until skins can be pierced with fork. Then place a teaspoon or tablespoon of sugar in each, according to acidity, and a bit of butter. Bake till slightly browned. Serve hot with meat, or cold. Pour over a sauce made by boiling down liquor in pan, thickened slightly, if preferred, with corn starch.

When you read this over you will probably say, as I did, "It doesn't sound good to me." But just try it. The fruit isn't sticky sweet like marmalade, but has a delightfully fresh taste, and the pungent flavor from the rind gives a delicious flavor.

Baked Bananas With Cheese

Make cut through top of banana the length of the fruit; press in a strip of cheese as long as the banana and a quarter of an inch thick. Place in baking pan and bake 10 or 15 minutes. Serve hot. Salt and lemon juice added at the table is considered an addition by some. These are good for breakfast, luncheon or dinner, also delicious at a weinie roast or over a camp fire.

Corned Beef and Cabbage Salad.

Take ½ head good firm white cabbage, 1 small can corn beef and 3 stalks white celery. Chop all very fine. Moisten with a good mayonnaise diluted with ½ cup thin or canned cream.

I use Durkee's salad dressing and dilute it with canned cream until I have the proper quantity.—Mrs. Chas. C. Bell, Artesia.

THE DRAIN BOARD.

Many housekeepers prefer zinc covered drain boards and kitchen tables to wood, porcelain or stone composition. The zinc is cheap, wears forever, is not injured by hot vessels and is easily cleaned. It may not be so attractive as porcelain or stone, but it is intensely practical.

WICKER FURNITURE.

Wicker furniture is so beautiful—some of it—so light to handle and so entirely suitable for California homes the year around that it is gratifying to see its steady growth in popularity. It is now made for use in every room in the home and finished in browns, greens, grays, cream and white to match any color scheme..

A famous lotion of colonial days, known as "morning days," consisted of of glycerine, half a teaspoon of borax one ounce of rosewater, half an ounce and three drops of benzoin. The quantities may be multiplied in a greater amount if needed. The lotion is applied to the chapped face made rough from wind or exposure with a bit of old linen.

The careful keeping of table linen will mean more toward a perfect table than perhaps the quality of the linen itself. The most exquisite table linen will look no better than the poorest quality if it be thrown into a too small drawer or closet.

Women owe it to themselves—it is as much a duty as that they owe their children—to care for their health and for their everyday appearance in cleanliness and neatness of dress.

If silver is rubbed up every day with a dry flannel rag it will not have to be cleaned with silver polish oftener than once a month.

We should devote our energy and talent to the solution of the problems of our own locality.

The Future Mother

The young bride who is about to face the problems of housekeeping will find in Ghirardelli's Ground Chocolate, a wholesome and economical food-drink. Start housekeeping right by serving this nutritious beverage. It will make any meal taste better and will keep the health in perfect condition. Costs less than a cent a cup. For making desserts and candy it is without an equal. Tell your grocer to send you a can.

In hermetically sealed tins.

Ghirardelli's Ground Chocolate is the only original ground chocolate. It has been used in Western homes for over a third of a century and its popularity is growing day by day.

D. GHIRARDELLI CO.
Since 1852 San Francisco

While our price will not be increased during 1914, there will be no reduction in quality.

GHIRARDELLI'S GROUND CHOCOLATE

A Meal in A Minute
GHIRARDELLI'S
TRADE MARK
GROUND CHOCOLATE
G
MADE INSTANTLY
PURE
SAN FRANCISCO

SANITARY WARMING CLOSETS. PAT. APP. FOR.
MAJESTIC
MAJESTIC
RESERVOIR LIFTS OFF AND ON EASY AS A WASH BOILER.

Good cooking made easy!

Good cooking depends as much on the range as on your skill. A cheap range or worn out stove makes cooking uncertain; and often spoils your best efforts.

Is that fair to you, or to your family, whose health and good humor are effected by what you serve?

The Majestic makes good cooking easy and sure. Made of charcoal iron and malleable iron; it stands rust and wear three times as long as ranges made of ordinary range metals. Put together with cold-rivets that keep the joints absolutely tight always, (no putty used.) Lined with extra heavy pure asbestos that holds in the heat and reflects it onto oven. Scientifically designed to maintain uniform temperature with least use of fuel; and to circulate heat evenly to all parts of oven. You never have to "turn the baking" in a Majestic.

[The 15 gallon all copper reservoir heats water as quickly as a kettle on a stove top; oven door lowers onto heavy braces; oven rack stays level, under load, when pulled out. Reservoirs flush with stove top have aluminum lids.]

The cost of a Majestic, in **service**, is less than that of any ordinary range. The fuel, repairs and work it saves and the **years** longer that it lasts, more than offset its little extra cost.

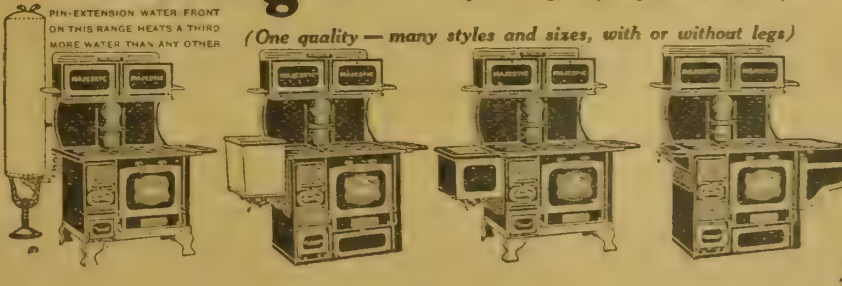
If you realized how much the Majestic reduces the work and worry of cooking, you would get one now. Find out! If you don't know the Majestic dealer near you, ask us. (There is one in every county of 40 States). Write for "Range Comparison" explaining the many Majestic points of superiority.

Great Majestic
Malleable and Charcoal Iron
Range

Majestic Mfg. Co., Dept. 203 St. Louis, Mo.

PIN-EXTENSION WATER FRONT ON THIS RANGE HEATS A THIRD MORE WATER THAN ANY OTHER

(One quality — many styles and sizes, with or without legs)



San Francisco--Los Angeles Produce Markets

Los Angeles Market

LOS ANGELES, Sept. 23, 1914.

The prices given below, except where otherwise noted, are those made by wholesale or commission houses to retailers, and are intended to give producers the range of the market rather than an indication of prices which they will secure. Jobbers' quotations to producers are not given.

BUTTER

It looks as if butter is being jobbed by dealers for in spite of much higher prices in San Francisco quotations here have been lowered this week.

Prices to trade 4 cents above following quotations:

Creamery Extras	.26
Firsts	.23
Country	.21
Ladle	.20

CHEESE

Prices to trade 1 and 2 cents higher:

California Fresh	.14½@16
Domestic Swiss	.19@20
Imported Swiss	.35@37
Longhorn	.19@20
Oregon Triplets	.18@18½

EGGS AND POULTRY

The egg situation remains much as last week. Receipts light and demand fair.

Prices to trade 3 cents higher than following quotations:

Fresh ranch, case counts	.35
Candled	.37@38
Northern Case Count	.42
Petaluma-Santa Rosa	.43

Prices to producers:

Hens, lb.	.14@19
Roosters, old	.9
Broilers, lb.	.20
Fryers	.18
Roasters, lb.	.17
Turkeys	.18@26
Ducks	.12
Geese	.14
Squabs, doz.	2.00

LIVE STOCK

The following quotations are f. o. b. Los Angeles on all stock:

Hogs, 175 to 200 lbs., per cwt.	9.00
Prime Steers	.7¼@7½
Heifers	.6¼@6½
Calves, lb.	.8½
Sheep—	
Ewes, head	4.00
Wethers	4.25@5.00
Lambs, head	4.50@4.75

POTATOES

Wholesale selling price:

Sweets, sack	1.70@1.80
Northern Burbanks, cwt.	1.30@1.40
Shimas	1.45@1.55
Lompocs	1.90@2.00

ONIONS

Wholesale selling price:

Australian Brown, cwt.	.90@1.00
Silverskins, cwt.	1.75@1.90
Yellow Danvers, sack	.90@1.00
Garlic	.16@17

VEGETABLES

Wholesale selling price:

Artichokes, Northern, doz.	.50@85
Beets, doz.	.30@35
Beans, String	.5@6
Lima	.3½@4
Cabbage	.65@70
Carrots, doz.	.30@35
Cauliflower, doz.	.90@1.05
Celery, doz.	.40@50
Corn, Sugar, box	.60@65
Field corn, sack	1.50@1.60
Cucumbers, lug	.35@45
Pickling, lug	1.10@1.35
Egg Plant	.3½@4
Escarole, doz.	.40
Horseradish, lb.	.12@13
Leeks, doz.	.35@40
Lettuce, crate	.90@1.15
Mint, doz.	.35@40
Okra, lb.	.6-7
Onions, Green, doz. bunches	.15@20
Oyster Plant	.25@30
Parsnips, doz.	.25@30
Peas, lb.	.5@8
Peppers—	
Bell, lb.	.3@4
Chili, lb.	.3@4
Radish, doz.	.20@30
Rhubarb, box	.80@1.35
Spinach, doz.	.20
Squash—	
Summer, lug	.30@35
Crookneck	.25@35
Hubbard, lb.	.2¼@3
Turnips	.30@40
Tomatoes, lug	.40@60

FRESH FRUIT

Wholesale selling price:

Apples—	
Alexanders	1.25@1.35
Banana Apples	1.00@1.15
Bellflowers	.70@90
Jonathans	1.25@1.35
King Davids	1.10@1.25
Crabapples	.90@1.00
Bananas	.3½@4
Berries—	
Strawberries, basket	.3@5
Raspberries, basket	.8@9
Blackberries, basket	.3@4
Cantaloupes—	
Locals, small	1.10@1.25
Locals, large	1.50@1.85
Casabas, doz.	.90@1.10
Figs, 2-layer box	.80@1.00
Grapes—	
Cornichon	.90@1.00
Concord	1.25@1.35
Malagas, crate	.75@85
Muscatels, lug	.70@80
Tokays, lug	.85@95
Peaches, lug	.60@80
Pears, Bartlett, lug	1.20@1.25
Seckel	.85@1.00
Pineapples, lb.	.6@7
Plums, lug	1.25@1.40
Quinces	.45@60
Watermelons, lb.	.½@1¼

CITRUS FRUIT

Wholesale selling price:

Lemons	3.50@4.50
Grapefruit, Seedless	2.25@2.50
Valencias	1.75@2.50
Limes, basket	1.50

DRIED FRUITS

Wholesale prices to retailers are:

Evaporated Apples, Fancy., lb. boxes	.6½@12½
Apricots	.9@11
Nectarines	.12½
Peaches	.6@7½
Pears	.8@12
Prunes	.5¾@17
Plums	.10

NUTS

Prices named by California Walnut Growers' Association are:

No. 1	.17½
Budded Walnuts	.21
No. 1 Soft Shell Walnuts	.16
No. 1 Hard Shell Walnuts	.15½
No. Twos	.11½

Prices fixed by California Almond Growers' Exchange, f. o. b. California.

Almonds—	
Nonpareil	.21
I X L	.20
N P U	.19
Drake's Thinshelled	.15
Pecans	.17
Peanuts—	
California, Raw	.6
Japan	.7½
Eastern	.7½
Rice Corn	5.00@5.25

HONEY

Wholesale selling price:

Comb, Fancy, Water White	.15
White	.13
Light Amber	.6½
Extr. Water White	.8
White	.7½
Light Amber	.7
Beeswax	.32

BEANS

Wholesale selling price:

Producer's price not far from one dollar under these quotations:

Limas	7.00@7.10
Lady Washington	5.50@5.60
Black Eyes	8.00
Pinks	5.00@5.25
Lentils	8.00@10.00
Small White	6.00@6.50
Garbanzos	8.00@8.50

RICE

Wholesale selling price:

California	5.00
Broken	4.00

HAY

Buying prices f. o. b. cars Los Angeles:

Barley	10.00@11.00
Wheat Hay	10.00@11.00
Tame Oat	11.00@13.00
Alfalfa	9.00@11.00

GRAIN

Wholesale selling prices f. o. b. Los Angeles:

Corn, Yellow	2.20
Corn, White	2.30
Wheat	2.00
Oats, Red	2.35
Oats, White	1.65
Kaffir Corn	1.90
Millet	3.75
Popcorn	4.75@5.00
Egyptian Corn	2.30
Barley Seed	1.45
Milo Maize	2.00
Cal. Seed Oats	2.25
Sunflower Seed	5.25@5.35

FEED STUFF

Wholesale selling prices f. o. b. Los Angeles:

Bran, Heavy	1.7b
Alfalfa Meal	1.05
Alfalfa Syrup, per cwt.	1.05
Beef Scraps	3.00@3.10
Beet Pulp	1.25
Cracked Corn, cwt.	2.20
Cracked Wheat, cwt.	2.15
Cotton Seed Meal	1.85
Bloodmeal	3.60@3.70
Bone Meal	2.00@2.10
Bone Green	1.95@2.05
Charcoal	1.90@2.00
Oil Cake Meal	2.05
Fish Meal	3.15@3.25
Rolled Oats	1.70
Rolled Barley	1.30
Middlings	2.00
Oat and Wheat Middlings	1.55

San Francisco Market

SAN FRANCISCO, Sept. 22, 1914.

The prices given below, except where otherwise noted, are those made by wholesale or commission houses to retailers, and are intended to give producers the range of the market rather than an indication of prices which they will secure. Jobbers' quotations to producers are not given.

BUTTER

Butter is a shade weaker and many dealers are anxious to unload. Arrivals light, some days not over 50,000 pounds.

Prices to trade 4 cents above following quotations:

Extras	.29
Prime Firsts	.27
Firsts	.26½
Seconds	.24

CHEESE

Wholesaler to retailer.

California Y. American	.14½@15½
California Flats	.10@14½
Cheddar	.20
Oregon Twins	.15

EGGS AND POULTRY

The egg market is strong and much higher quotations are made the last week.

Prices to trade 3 cents higher than following quotations:

Extras	.43
Select Pullets	.33½
Storage, extra	.30

Price to producer:

Hens	.15@18
Fryers	.20@21
Roosters, old	.12
Roosters, young	.20@22
Broilers	.19@21
Belgian Hares, lb.	.10@11

LIVE STOCK

San Francisco prices, gross weight:

Steers	.4@6¾
Cows and Heifers	.3@6¼
Calves, lb., live weight	.6@9½
Hogs	.9@10¼
Wethers	.5@5½
Ewes	.4½@5
Milk Lambs	.6½@6¾

POTATOES

Wholesale selling price:

Delta, Burbanks	.70@1.00
Sweets, cwt.	1.40@1.50

ONIONS

Wholesale selling price:

Yellow, sack	.40@50
Garlic, new	.10@12½

VEGETABLES

Wholesale selling price:

Beans—	
Limas, lb.	.2½@3
Wax, lb.	.1@2
Strings	.1@2
Cabbage, cwt.	1.00@1.25
Carrots, sack	.35@50
Celery, doz.	.25@35
Corn, Green, sack	1.00@2.00
Cucumbers, lug	.20@30
Egg Plant, lug	.40@60
Peas, lb.	.3@5
Peppers—	
Bell, lug	.30@40
Chili, lug	.35@50
Rhubarb, box	.60@1.00
Tomatoes, lug	.25@40

FRESH FRUIT

Wholesale selling price:

Apples—	
Gravensteins	.50@1.00
Bellflowers	.65@75
Crabapples	.40@85
Spitzenbergs	.25@80
Bananas, Hawaiian, bunch	1.25@1.75
Cantaloupes, crate	.75@1.25
Delta, lug	.20@35
Casabas	.50@75
Figs—	
Black, double layer	.40@50
Black, single layer	.25@30
White, box, single layer	.20@35
Grapes—	
Black	.25@40
Tokay	.40@60
Seedless	.40@50
Malagas	.40@60
Muscats	.50@60
Huckleberries, lb.	.5@8
Nectarines, crate	.75@1.00
Peaches, lugs	.20@40
Pears, box	.65@1.00
Bartletts	1.00@1.35
Winter Nelis, box	.75@1.00
Other varieties	.35@50
Plums, crate	.75@1.25
Lug	.75@1.25
Pineapples, Hawaiian, doz.	1.50@2.00
Pomegranites	.50@75
Persimmons	1.00@1.25
Prunes, crate	.60@1.00
Quinces, box	.75@1.00
Blackberries, chest	4.00@6.00
Raspberries, chest	4.00@6.00
Strawberries, chest	1.50@3.00
Watermelons, doz.	.75@1.50

CITRUS FRUIT

Wholesale selling price:

Grapefruit, Seedless	1.00@2.50
Lemons	2.00@5.00
Lemonettes	5.00@6.50
Valencias	1.25@2.25

DRIED FRUITS

Wholesale prices are:

Prunes—1914 crop, bulk basis, 30-40s, 6½c@6¾c; 40-50s, 6@6¼c; 50-60s, 5½@5¾c; 60-70s, 5½@5¾c; 70-80s, 5¼@5½c; 80-90s, 5¼@5½c; 90-100s, 5¼@5½c. 1913 crop worth practically same prices. The above are for Santa Clara Prunes, outside sections about ¼c.

Other Fruits 50-lb. boxes—	Standard.	Ch.	Extra Ch.	Fcy.
Evaporated Apples		5¾c	6 c	7 c
Apricots	6½c	7½c	8 c	8¾c
Peaches	3½c	4 c	4¼c	5 c
Pears	7 c	8 c	9 c	10 c

RAISINS

RAISINS—The following prices are f. o. b. Fresno, as given out by the Associated Raisin Company for September shipment, and with the exception of bulk seeded and ungraded Muscatels are guaranteed against a decline to December 31st: Fancy seeded, 16-oz., 6½c; 12-oz., 5½c; bulk, 6c; choice seeded, 16-oz., 6⅛c; 12-oz., 5c; bulk, 5½c; loose Muscatels, 2-crown, 5c; 3-crown, 5¼c; 4-crown, 5¼c; ungraded, 5c; 1914 crop—Thompson Seedless, No. 1, pkgs, 7⅜c; 12-oz., 6c; 50-lb. cs., 6¼c; Sultanas, 50-lb. cs., 5½c; bulk, layers, 50-lb. bxs., $2.75; in 20-lb. bxs. 6-crown, $2.75; 5-crown, $2.25; 4-crown, $1.60; 3-crown, $1.30; 5-lb. bxs. on all bulk stock, 50c additional; 10-lb. bxs., 25c additional. Car tons—Clusters, 20 to a case, No. 1, $1.70; No. 2, $2.10; No. 5, 4 to a case, $2.25. Local representatives of the association are asking about ¼c higher, while several of the larger packers are quoting ½c under these figures.

NUTS

ALMONDS—Prices fixed by Almond Growers' Exchange to the trade, f. o. b. California:

Nonpareil	.21
I X L	.20
Ne Plus Ultra	.19
Drakes	.16

Wholesale selling price:

Peanuts—	
Unpolished	.5@8
Polished	.6@6½
Japanese, Shelled	.6¼@6¾
Italian Chestnuts	.6½@7

BEANS

Wholesale selling price:

Limas	6.25@6.40
Lady Washington	4.50@4.75
Pink	4.00@4.25
Black Eyes	4.50@4.75
Cranberry	5.25@5.50
Small White	5.25@5.50
Garbanzos	5.00@5.50
Large White	4.50@4.75
Bayou	5.00@5.50
Manchurian Speckled Bayous	3.75@4.00
Manchurian Butters	4.50@4.60
Manchurian Cranberry	4.00@4.25
Red Mexican	5.25
Horse Beans	1.90@2.0
Mexican Bayou	5.00@5.50

HONEY

Comb, Water White	.14@16
Amber	.10@12
Dark	.7@10
Extracted White	.7@9
Light Amber	.6½
Dark	.4@5½
Beeswax	.27@32

HOPS

1914

Sacramento Valley	.16½@17½
Sonoma-Mendocino	.18@20
Oregon Clusters	.18

HAY

Under date of September 19 Scott, Magner & Miller say:

Receipts for the past week were 3987 tons, approximately the same as the previous week. Although receipts for the past two weeks have not been as heavy as for several weeks preceding, the market has been so heavily stocked for sometime that the decrease has not been noticed. Demand is very light. Large consignments continue to arrive.

The majority of the receipts continue to be of the medium and poorer grades, although the past week has seen quite a little fancy hay, which has sold readily. Demand for alfalfa is light. Large offerings of this commodity are in evidence, but few lots are changing hands. No change in straw. We quote the average wholesale prices on carload lots on today's market as follows:

Fancy Wheat Hay, lt. bales	11.00@12.00
No. 1 Wheat or Wheat and Oat	8.00@9.00

WEATHER CONDITIONS

For week ending Sept. 19, 1914.

Report from the various stations of the U. S. Weather Bureau, by Geo. H. Wilson, director, San Francisco:

	Rainfall Data			Temperature Data.	
	Past Week.	Seasonal to Date.	Normal to Date.	Maximum.	Minimum.
Eureka	1.30	1.54	.75	76	44
Red Bluff	T	T	.29	86	52
Sacramento	.00	.00	.16	86	52
San Francisco	T	.02	.04	78	54
San Jose	.00	.00	.19	82	44
Fresno	.02	.02	.01	92	54
Independence	.00	.16	.00	86	40
San Luis Obispo	.00	T	.17	82	48
Los Angeles	.00	.01	.00	86	54
San Diego	.00	.00	.00	76	54

No. 2 Wheat or Wheat and Oat	6.00@7.50
Choice Tame Oat	10.00@11.00
Other Tame Oat	7.00@9.00
Barley	6.00@8.00
Wild Oat	6.00@8.00
Alfalfa	6.00@9.00
Stock Hay	4.50@5.00
Straw, new	30@45

GRAIN

Wheat, Cal. Club	1.72½@1.75
Corn, Eastern Yellow, blk.	1.85@1.86¼
Barley, Feed	1.12½@1.17½
Oats, White	1.55@1.60
Millet	2¾@3
Flax	4½@5
Rye	1.55@1.60
Oats, Red	1.45@1.55
Oats, Black	1.75@2.25
Sunflower	5@5½

FEED STUFF

Alfalfa Meal, car lots	11.50@12.50
Bran, ton	30.00@30.50
Feed Cornmeal, ton	43.00
Cracked Corn	43.00
Rolled Barley, ton	24.00@25.00
Rolled Oats, ton	37.00@37.50
Middlings	32.00@34.00
Shorts	30.00@31.00
Oilcake Meal	32.00@33.50
Cocoanut Oilcake Meal	23.00@24.00

Citrus Fruit Market

LOS ANGELES, September 23, 1914.

It is certainly strange what will affect marketing conditions. Last week sales of oranges in the city of New York dropped from 30 cars to seven. The explanation is given that this was largely due to certain Jewish religious observances, which were general in certain quarters of the city. In addition there are immense receipts of deciduous fruits, amongst which is a 12,000 barrel shipment of Almeria grapes.

There are approximately 40,000 boxes of lemons coming weekly from the Mediterranean section. However, high-grade Californias are selling in the New York market at fair prices.

Shipments.

Shipments of oranges to date since November 1, 1914, 36,651 cars; lemons, 2,713; total, 39,364. To same date last season, oranges, 13,155 cars; lemons, 2,140; total, 15,295. Total of all citrus fruits two years ago this date, 34,465 cars.

NEW YORK, Sept. 21.—Seven cars Valencias sold. Market slightly easier. Weather fair.

VALENCIAS—

	Avge.
Signal, Stewart Ft. Co.	$3.40
Mayflower, Stewart Ft. Co.	2.65
Pilgrim, Stewart Ft. Co.	2.15
Buena, Stewart Ft. Co.	2.00
Old Mission, xf., Chapman	3.45
Old Mission, fy., Chapman	2.75
Golden Eagle, sd., Chapman	2.05
Old Mission, fy., Chapman	2.75
Golden Eagle, sd., Chapman	2.05
Alphabetical, Or. Ex.	2.60
Ticktock, Or. Ex.	2.20
Charter Oak, S. D. Ex.	3.30
Red Ridinghood, S. D. Ex.	2.10
Kenilworth, A. H. Riv.	2.45
Peasant, A. H. Riv.	2.45
Plain Ends, A. H. Riv.	1.60
Daisy, Covina Ex.	1.95
Gladiola, Covina Ex.	1.60

PHILADELPHIA, Sept. 21—Four cars sold. Very hot. Market steady.

VALENCIAS—

	Avge.
Daisy, Covina Ex.	$1.80
Gladiola, Covina Ex.	1.45
Columbo, S. T. Fullerton	2.30
Las Palmas, S. T. Fullerton	1.90
Mt. of Olives, Growers Ft. Co.	3.05
Olive Heights, Growers Ft. Co.	2.50
Regina, Growers Ft. Co.	2.45
Las Palmas, San Marino G.	2.45
Angeles, Growers Ft. Co.	2.15
Big Four	1.85
El Toreador. San Marino G.	1.75

CLEVELAND, Sept. 21.—Two cars Valencias, one car lemons sold; market very strong on Valencias, advancing on lemons. Warm, clear.

VALENCIAS—

	Avge.
Whittier, S. T. Whittier	$2.00
Daisy, Covina Ex.	2.75

LEMONS—

	Avge.
Kaweah, C. C. Lemon Cove	$2.95
Basket	2.20

CINCINNATI, Sept. 21.—Very hot. Market declining. One car oranges, one car lemons sold.

VALENCIAS—

	Avge.
Plain Bells, R. H. Redlands	$2.15
Pearl, R. H. Redlands	1.25

LEMONS—

Loma, V. C. Limco	$2.53

BOSTON, Sept. 21.—Five cars oranges, one car lemons sold. Clear and warm. Market is easier on oranges, unchanged on lemons.

VALENCIAS—

	Avge.
Green Crown, A.C.G. Azusa	$2.35
Glendora Home, A.C.G. Glen	2.00
Hunter, A.C.G. Glen	1.45
Echo, S.T. Pasadena	2.65
Arroyo, S.T. Pasadena	2.00
Whittier, S.T. Whittier	2.50
Orchard, National O. Co.	2.90
Standard, National O. Co.	2.00

LEMONS—

Blue Hussar, O.K. Ex.	$3.10
Green Hussar	1.10

GRAPEFRUIT—HALVES—

Orchard	$1.30

ST. LOUIS, Sept. 21.—Clear and cool. Market steady. Two cars sold.

VALENCIAS—

	Avge.
Echo, S.T. Pasadena	$2.95
Arroyo, S.T. Pasadena	2.25
ournament, S.T. Pasadena	2.40
Don Quixote, S.T. Ex.	2.50
Setter, A.H. Arlington	2.65
Prairie Chicken, A.H. Arlington	2.30
Spanish Girl. A.H. Arlington	1.90

PITTSBURGH, Sept. 21.—Three cars oranges sold. Favorable.

VALENCIAS—

	Avge.
Golden Circle, R.H. Redlands	$2.00
Martha Washington, Or. Tustin	2.25
Cowboy, Or. Tustin	2.00

CHICAGO, Sept. 21.—New apples, 2.00@4.50 per barrel. Lemons, California, 4.00@5.00 per box. Oranges, 2.75@4.00. Peaches, 60@1.25 per bushel, 15@20 per one-fifth bushel basket. Pears, 2.00@5.00 per barrel. Lima beans, 22½ per quart. Mushrooms, 10@25 per pound. Onions, 65@1.00 per sack. Peppers, 30@75 per tomato box.

PIPE PIPE PIPE

Last chance to buy Aqueduct pipe. Prices reduced to close out this month the small amount left. Over 150,000 feet sold in last 4 months. This is good, clean pipe—used only for clean water purposes along the famous Aqueduct. Just as good as new pipe—and price very much less. Prompt shipments to any railroad station. Mail or phone your orders immediately, as this opportunity will not last. AQUEDUCT PIPE CO., 1327 West 7th, Los Angeles. Phone Wilshire 1315. Sizes left: I-inch, 2-inch, 3¼-inch, 3½-inch.—Adv.

Veterinary

Answers in this column by Dr. Wm. Petrie, 2714 South Harvard Blvd., Los Angeles, are without charge. For immediate mail answer remit $1.00. In writing questions give full symptoms or particulars of injury of animal.

Kick on Hock

Have cow which was kicked on hock some time ago, causing an abscess to form. This was opened by a veterinarian, but has since refused to heal. How should it be handled so as to cause the open wound to heal over?—Subscriber, Hynes.

Apply a little nitric acid to the parts that will not heal. This will form a scab. When it heals and drops off it may be necessary to touch it again. Be careful in using the nitric acid, as it is a powerful caustic. Apply it to the wound with a small swab and do not get it on your hands or clothing.

Lice on Goats

A friend of mine owns 1500 Angora goats and asks me to write to you in regard to treatment for lice, or whatever it is, that infests them. He is experienced in dipping cattle and sheep and has dipped these goats twice, the first time in sheep dip, and a month later in soap-kerosene emulsion. Neither had any effect. I suggested the possibility of fresh broods hatching and he replied that the old ones were not killed, but were lively just after dipping. — Subscriber, Ontario.

You did not give the name of your sheep dip, but we think that if you would dip them in a two per cent solution of Zenoleum and repeat the dipping in a week you would get rid of any lice. It may be ticks that are infesting the goats. In that case it might be necessary to make the solution a little stronger.

Herpes or Nettle Rash

My four-year-old horse is suffering from an attack of itch or mange I suppose. It commenced last April by little lumps raising on the skin and itching terribly. The lumps had some pus or moisture of some kind in them. The trouble was worse on the sides of neck and shoulders. A few lumps appeared from time to time. The horse has been treated twice by rubbing on lard, sulphur and kerosene mixed. The neck, shoulders and head are still very bad. He also breathes heavily in hot weather and I thought he had a tendency to the heaves. Can you give remedy?—Subscriber, Hemet.

Those cases of irritation of the skin which are accompanied by slight eruptions are given various names, as the above. The trouble seems to be caused by the condition of the blood. Get one-half ounce of Barbadoes aloes, one-half pound epsom salts, and one-fourth pound of common salt. Dissolve all in a quart of hot water and when cool give at one dose as a drench. Follow this by giving powdered gentian, four ounces and bicarbonate of soda, six ounces. Mix and divide into 15 powders. Give one powder every night. To stop the irritation bathe the parts with cold water that has dissolved in it four ounces of borax to the gallon.

Milk Fistula

I have a cow that has two holes about in the middle of the two back teats. One spatters so it bothers when milking. How can they be treated so they will heal while she is dry?—Subscriber, Murrietta.

You will find the answer to this question in the Cultivator of August 20 on page 187 under the heading, "Milk Fistula." The operation will be the same on a cow as on a goat.

Lice or Mange

I have a horse afflicted with what those who seem to know call mange. His chief symptom is itchiness and consequent scratching to such an extent that he has rubbed off his mane and much of his tail, beside causing raw places on his back. I have applied diluted "Kreso Dip," which is apparently one of the numerous coal tar disinfectants. It seemed to temporarily allay the trouble but the irritation returns. Can you tell me what to do to cure the affection? What animals are likely to catch it and by what means?—Subscriber, Riverside.

The application of sheep dip should have been repeated as often as once a week for four or five weeks so as to be sure to catch the young as the sheep dip does not affect the eggs. If that fails, get one gallon of a thin engine oil and one pint of oil of tar. Mix them thoroughly and apply to the irritated parts twice a week. Rub it in well. Horses or cattle might get the trouble by the mites being transferred from one animal to another by rubbing against the same post, but frequently one animal will be bothered with lice or mange for some time before others of the same herd get them.

Swollen Sheath.

Will you please inform me through the Cultivator what is the cause of a horse's sheath swelling and what is the remedy? He is clean but poor in flesh and cannot eat his feed well. —Subscriber, Exeter.

There are many causes for the sheath swelling. The best remedy is as follows: Nitrate of potash six ounces, soda bicarbonate three ounces and powdered gentian two ounces. Mix and make into fifteen powders and give one every night. Also have the teeth fixed by a veterinarian.

Worms

My horse has not been doing well for six months. He has a good appetite at all times. I feed him the best of oat hay and four quarts of rolled barley mixed with two quarts of alfalfa and molasses at each meal, but he continues to be very thin and can not stand much work although I have worked him nearly every day. He has formed the habit of carrying his tail to one side and slightly raised. I also notice a milky white substance about the rectum. He also rubs his tail. Can you tell me the trouble and what to do?—Subscriber, Yucaipa.

The white substance about the rectum and the rubbing of the tail indicate the presence of worms. Probably the horse has both stomach and pin worms. You are overfeeding the horse and that alone will cause the kind of indigestion that will keep him thin in flesh and furnish the best of material for the worms to thrive on. First reduce the grain feed one half and do not give over one pound of hay to each 100 pounds of horse every 24 hours. Sometimes worms are hard to start, but be persistent and they will leave. Get the following: Powdered gentian four ounces, powdered nux vomica three ounces, bicarbonate of soda six ounces, sulphate of iron three ounces and farina eight ounces. Mix and give a tablespoon twice a day, and every five or six days give a pint of raw linseed oil with two ounces of turpentine in it. For the pin worms, use a decoction of tobacco as an enema. Use tobacco stems or any leaf tobacco and put about six or eight ounces in two gallons of water. Boil it for 20 minutes and when cool strain and inject all into the rectum. Make the horse retain it as long as you can. Repeat this in one week.

Lack of Milk flow

Two cows that recently came fresh are not doing well. They are in good flesh and so far as I can see are in good health but are not giving near the milk they should. They are increasing slowly, but I fear will never do what they should. One of them had milk fever last year, so I gave her an extra dose of salts this year; two and one half pounds the night before she freshened and one pound the following night. Was that too much? They are running on alfalfa pasture and have alfalfa hay night and morning. Can you suggest a remedy?—Subscriber, Turlock.

Your doses of salts were rather large; half the amount would have been enough. The lack of milk secretion would indicate a sluggish condition of all the secreting organs. Try the following tonic and we would be glad to hear the result: Powdered nux vomica eight ounces, powdered gentian eight ounces, bicarbonate of soda 12 ounces, and farina 12 ounces. Mix and give a tablespoon morning and evening in a little feed. Occasionally animals will not eat feed that has medicine in it. In that case put the dose in a long neck bottle, add a cup of water and give as a drench.

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Black
Purple
and other
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by
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ZENO *is not an experiment* but has been used for controlling pests on Citrus and Olive trees for the past five years. It is being used by the largest and most progressive growers in Southern California.

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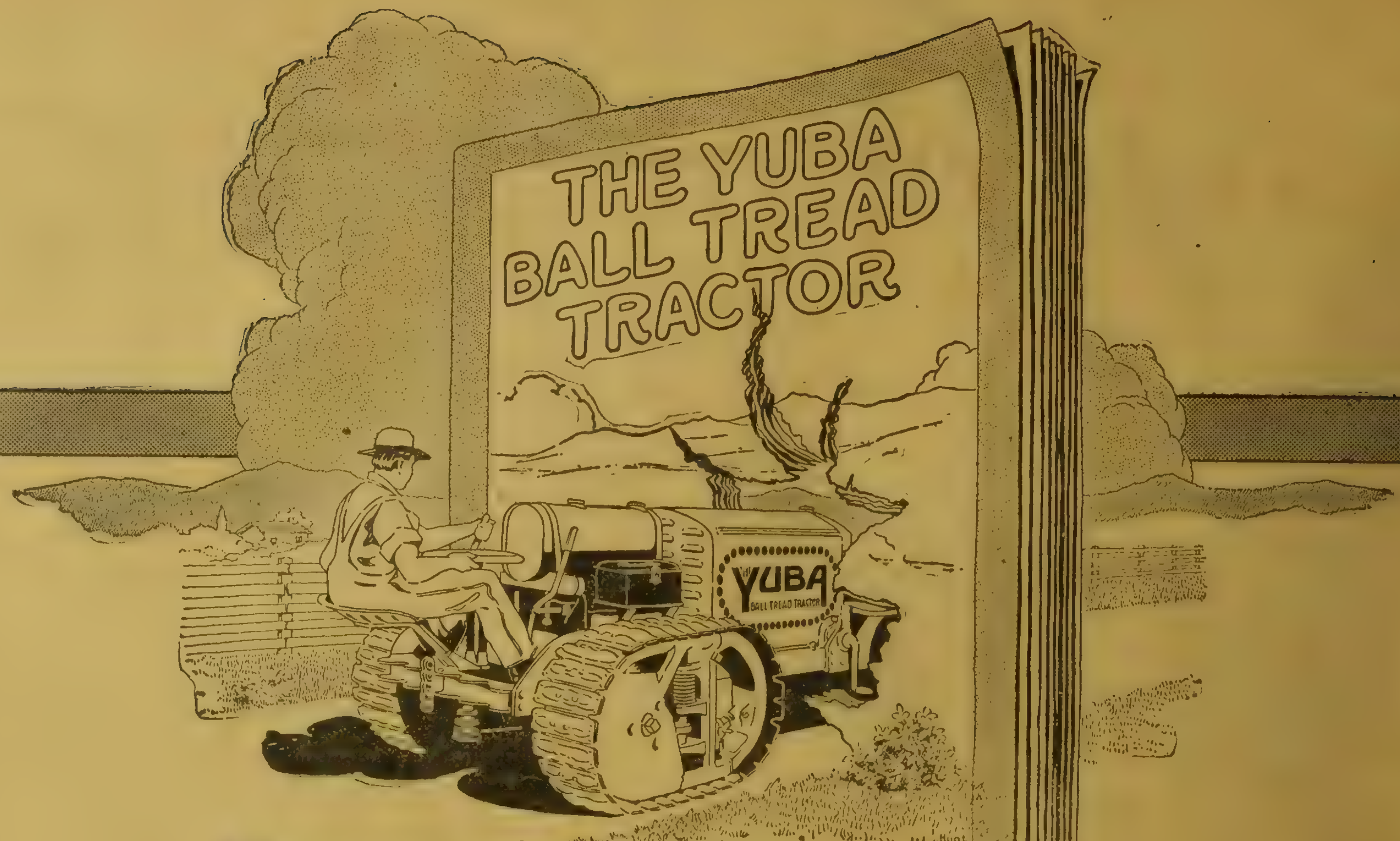
For information and demonstration in Southern California, address T. O. McClure, Hotel Hayward, Los Angeles.



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Through this booklet lies the easiest and most economical road to better farming.

If you are raising fruit, grain, rice, alfalfa, hops, beans, grapes or any other crop, you are anxious to discover a means of making your work easier and your profits larger. We know a way—this booklet tells what it is.

THE YUBA BALL TREAD TRACTOR

Two years ago the first Yuba Ball Tread Tractor was built and put into operation. It made good. Others followed. These machines are owned by scientific farmers—careful business men who invest in, rather than buy, farm equipment.

In their hands, the tractors have been thoroughly tested at every kind of work. The results of these tests have proved that the road to better farming runs through the pages of this booklet.

For the sake of convenience, here is the coupon.

Cut Here

THE YUBA CONSTRUCTION CO.
433 California St., San Francisco
Dept. D-4

Gentlemen: Kindly send me a copy of your booklet "The Yuba Ball Tread Tractor."

Name .... *P. O. Box* ....
Town .... *State* ....
Size of Farm ....*Acres.* *(Check main crop raised.)*
Fruit .... *Rice* ....
Grapes .... *Alfalfa* ....
Grain .... *Hops* ....
Hay ....

CALIFORNIA CULTIVATOR

Rural Californian combined with California Cultivator

An Illustrated Weekly Magazine, Devoted to the Rural Home and Ranch

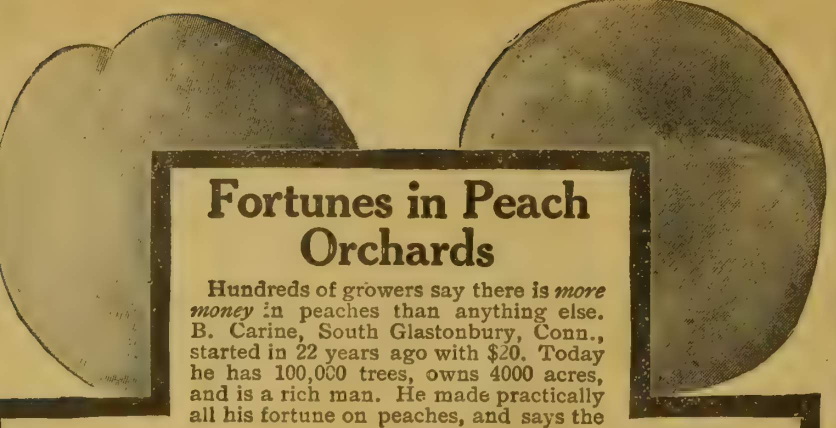
LOS ANGELES October 1, 1914 SAN FRANCISCO

Head Waters of the Owens River

California Enterprise has Caused These Waters to be Taken Through Mountains and Over Deserts 250 Miles, Where They are Used to Create Power to Irrigate the Thirsty Land and Add to the Happiness of Californians.

BOOST FOR

CALIFORNIA



Fortunes in Peach Orchards

Hundreds of growers say there is *more money* in peaches than anything else. B. Carine, South Glastonbury, Conn., started in 22 years ago with $20. Today he has 100,000 trees, owns 4000 acres, and is a rich man. He made practically all his fortune on peaches, and says the

Biggest Money-Maker Is Stark Early Elberta

It comes in when the market is right—with no other peaches on the market—10 days ahead of old Elberta. Is the sweetest, best-flavored, finest-grained, hardiest yellow freestone peach in the world. Give it a place in your orchard this year. Get top prices on all you can produce. *Plant this fall sure*—gain a year.

Write today for free buyer's low price catalog showing all fruits and ornamentals.

STARK BROS., Box 150, Louisiana, Mo
(The Home of Stark Delicious)

With Orders Amounting to $75.00

We want everyone to have one of our **Building Material Catalogs.** We are going to give 750 sq. ft. of 2-inch Mesh Poultry Wire with every $75.00 order. **Send Coupon below FOR ONE OF OUR BUILDING MATERIAL CATALOGS.** Look over the bargains offered at a saving of 25 per cent to 40 per cent. Send us your order for any article or articles listed. If your order amounts to $75.00 we will immediately ship the fencing **Absolutely Free.** If your order does not amount to $75.00 save your receipts until you have purchased this amount from us, and with the last order we will ship the Fencing, **Absolutely Free.** Your order need not amount to $75.00 in a specified time to receive this **Free Fencing.** It is only necessary that you make your first purchase with us by January 1st, 1916. **CAN YOU APPRECIATE WHAT WE ARE OFFERING YOU?**

Our prices on **HIGH GRADE BUILDING MATERIAL** are always the lowest. Our Million Dollar Stock enables us to sell under the market. Convince yourself'

Read this small list, below, carefully. It is to give you an idea of how we sell **Building Material.**

High Tank

Toilet Combinations complete to floor; special bankrupt stock....	$10.00
Low down enamel steel toilet combination, complete to floor........	$12.50
Low down vitreous china closet combination; Special........	$16.00
Special reductions on Kitchen Sinks: 20x30, No. 2; 18x36, No. 2...........	$2.75
Corrugated Galvanized Iron, special price, until further notice, all lengths from 6 to 10 feet; per 100 sq. ft.........	$3.65
Roofing paper: 1 ply sanded...............	$1.00
2 ply sanded..................	$2.75

Samples sent on request.

A complete line of bath tubs, lavatories, toilets, pipe, fittings, etc.

Instantaneous heaters, in good order...........	$7.50
Fire damaged toilet combinations	$9.50
Sheet steel sinks, slightly smoked; all sizes; each	$1.00
Wall Board: 650 pounds to the thousand. No. 2, regular price $25, cut to per thousand sq. ft........	$19.00
Standard line House Paint, guaranteed. All colors, per gallon.................	$1.50
Shingle stain, all colors and black.........	$0.50
Graphite Roof Paint, per gallon...............	$1.00
Interior Oil Stains, per gallon.................	$1.00

Everything else in the paint line at proportionate prices. We carry everything in **Building Material.** Our stock is complete.

THE WAY TO OBTAIN FREE FENCING

Lumber

We positively have the best offerings in Lumber, both in rough and finish, in Southern California. You lose if you do not write us for estimates.

Always the Lowest on Sash and Doors

We carry everything in this department. Two light, double hung windows, 1⅜ inches thick. Best Quality American window glass, all sizes.....	60c up
No. 1 Colonial Door, selected kiln dried Oregon Pine, this is a special value, all stock sizes.......	$1.50 up

Second Hand Building Material Carried Only by Whiting Wrecking Co.

2x8 and 2x10 to 24 ft.; Per M.	$12.00
2x14 and 2x16, 24 ft. Per M.	$15.00
We have lengths to 38 ft. 3x14 to 38 ft. Per M.	$15.00
1x8 No. 3 Redwood boards. Per M..........	$12.00
⅝x4 ceiling new. Per M.	$20.00
1-inch pine boards, all lengths, per M.........	$11.00

HARDWARE

Copper bottom boilers	$1.50
Galvanized tubs, each	40c
Galvanized buckets, each	25c

A complete and full line of fencing of all kinds.

Everything in light builders' hardware.

Be sure to write all correspondence for second-hand building material to

Whiting Wrecking Co.
9th & San Pedro Sts.
Los Angeles, Cal.

Please Send FREE Your Catalogue Including FREE OFFER

Name .... CULT

City ....

Whiting-Mead Commercial Company
9th St. and Maple Ave. Los Angeles, Cal.

Every Farmer Should Be Posted On This Wonderful New Forage Crop

200 ACRE FIELD OF SUDAN GRASS AT MATURITY
GROWN BY E. J. COWART,
LUBBOCK, TEXAS

AFTER CUTTING,
HARVESTED 1½ TONS
PER ACRE

SUDAN GRASS

Chief of all hay products—bigger, better and more certain in yield than any other forage crop.

Sudan Grass has been grown successfully wherever tried. Thrives in any soil—whether rainfall is ample or limited. Resists drouth—for dry and semi-arid sections it is the ideal crop. It obtains luxurious growth when other crops need moisture—yet does not blight where rainfall is excessive.

Sudan Grass is finer in growth and more leafy than sorghum—produces more and better hay than millet—has no root stocks like Johnson grass. It can not become a pest or infest the land.

It yields an average of 400 lbs. seed to the acre, and from one to two tons of hay from each cutting. Can be cut three or four times a season—every thirty days brings up a new crop from the stubble. An acre will produce four to six tons hay every year.

Sudan Grass makes a splendid feed for stock, whether cured or as ensilage. Stock relish it, preferring it to any other hay. It exceeds timothy in nutritive value. It will save you from buying feed because

A Sudan Grass Crop Can't Fail

Be sure you get the proper seed—pure *Sudan Grass.* Many adulterations are being offered for sale. You can only protect yourself by buying seed that has been carefully grown, gathered, cleaned and packed under strictest supervision. This means seed supplied by the Lubbock Sudan Grass Seed Association.

Read the following statement by Mr. B. Youngblood, Director, Texas Experiment Station:—"We took special pains to organize a local experiment "station at Lubbock, and have a considerable acreage planted there, as we "felt that the Texas plain country would be one of the best producing centers "in the U. S."

Lubbock Sudan Grass Seed is absolutely pure and thoroughly reliable. It has been grown under the supervision of the Lubbock County Experiment Station, V. L. Cory, Supt., and every field has been officially inspected, certified to and passed before harvesting. Quality always assured.

Put up in 1-2-5-10-25-50 and 100 lb. packages. Retail prices delivered:

1-10 lbs.	$1.00	per lb.
11-25 "	.95	"
26-50 "	.90	"
Excess of 50 lbs.	.85	"

FREE SAMPLE OF SUDAN GRASS SEED
Lubbock Sudan Grass Seed Association
Lubbock, Texas

FREE Sample Package and Booklet on request.

The booklet tells the story of *Sudan Grass.* Gives expert directions how it should be sown, grown and harvested to produce best results. Every stockman and farmer in the country should post himself on this wonderful forage. It means money.

LUBBOCK SUDAN GRASS SEED ASSOCIATION,
Selling Agency for Lubbock County Experiment Association,
DEPT. C LUBBOCK, TEXAS

California Cultivator

Rural Californian combined with California Cultivator

Vol. XLIII No. 14 LOS ANGELES: THURSDAY, OCTOBER 1, 1914 One Dollar Yearly

California — "Terrestrial Paradise"

A State of Great Accomplishments; A State of Greater Future; A State of Greatest Beauty and Attractiveness and Filled With Admirers and Lovers Who Have Devoted One Day, October One, 1914 to Enumerating and Praising and Boosting California's Wonderful Opportunities.

HISTORICAL NOTE.—California was named by Spanish discoverers from a fabulous island described in a Spanish romance as "on the right hand of the Indies * * * very near to the Terrestrial Paradise." The territory now constituting the state of California was first visited by white men in 1542, when Juan Cabrillo, a Portuguese navigator in the service of Spain, explored the coast and islands in the Santa Barbara region and probably sailed as far north as Monterey Bay. In 1579 Sir Francis Drake sailed along the coast and landed, supposedly at Drake's Bay, a few miles northwest of San Francisco. He named the country New Albion and took possession in the name of Elizabeth of England. The English did not occupy the region, however, and the first settlement was made by the Spaniards in 1769 when the Franciscan Fathers founded a mission at San Diego. In 1776 the Mission Dolores was established where San Francisco now stands.

California was under Spanish rule until 1822, when, on the successful termination of the Mexican Revolution, it declared its independence of Spain and its allegiance to the newly established Mexican government.

For several years prior to 1846 large numbers of immigrants from the United States had been arriving in California, and in June of that year a revolt against Mexico was begun by the American settlers. The Mexican war was already in progress, and during July and August, 1846, the American flag was raised at Monterey, San Francisco, Sonoma, Sacramento, San Jose, San Juan Bautista, San Diego, Santa Barbara, San Pedro and Los Angeles. The final surrender of the Mexican forces to those of the United States took place in January, 1847. In February, 1848, by the treaty of Guadalupe Hidalgo, the Mexican claims to California and to territory north of the Gila and Rio Grande were ceded to the United States.

From 1846 to 1849 California was under military and provisional rule by the United States. In October, 1849, a state constitution was adopted by a convention held at Monterey; in the following month it was ratified by the people, and state officers were elected. On September 9, 1850, California became a state of the Union.

The total area of California is 99,617,280 acres, of which nearly one-half belongs to the federal government. Only 27,931,444 acres are in farms and less than half of this is in the class termed "improved land in farms," hence the general campaign of advertising to secure settlers who shall make the lands of the state more productive. This campaign has been conducted since the discovery of gold, and during recent years with more persistence. There have been times when farmers have questioned the advisability of such a campaign. They have said, "What other business in the world is asked to urge others with capital to enter into the same line and compete with it?" To such we would say that the conditions are hardly the same. Take, for instance, the citrus industry of this state. It has become a wonderful success because of its magnitude. Were there only half as many orange and lemon growers, there would not be sufficient funds to secure the perfect organization which now enables them to market under best possible conditions. To market any product successfully it must be produced in quantity sufficient to make a suitable market at any period of the year. The grower of the specialty who stands alone also stands alone in making his market. He may succeed wonderfully; more often he fails.

PICTURESQUE, BUT NOT SO OFTEN SEEN IN CALIFORNIA AS IN FORMER YEARS

The great ranges have given way and the more profitable fruit industry has largely taken their place.

A center has been formed in the state of New York, given up almost exclusively to Holstein breeding. It would be perfectly human for one dairyman in that section to say, "All my neighbors are producing Holsteins. I will raise another breed." The moment he does that he loses the force of the advertising which that section has carried on, for now it is well known the world over that most excellent strains of Holsteins may be had there. The same is true of the Guernsey in Wisconsin, and true of other stock in other sections.

Other features of agriculture the world over prove this contention. Is it not wise, then, that we should encourage every possible extension of our fruit growing, cattle raising, swine husbandry and other agricultural industries? Instead of having less than 28 per cent of our land in farms, and only 40 per cent of this farming land highly improved, let us increase it so far as possible. We may then secure better transportation and marketing facilities. As before stated, much of this land is in the hands of the government, and always will be, partly because of reservations, mainly because it is not tillable land. The greater proportion of the lands which are worthy of highest cultivation have been taken up. Extension of railroads and development of irrigation waters will place yet other thousands on the market, but for the poor man such ventures are not possible except through cooperation in a large way.

In addition, the loss of social and educational advantages in thinly settled sections calls for the offering of every encouragement to the settler.

As to quality of the settler who has sought California, the world has offered its best and it has been accepted. Society, schools and churches of California are the finest in the world. But why is the trend more largely to the cities? California's increase in population in the decade, 1900-'10, was 60.1 per cent, while the increase of the rural portion during the same decade was 34.5 per cent. Compared with the entire United States, there is still much room for congratulation, for the increase in population the country over was 21 per cent.

But now, with the best of roads, trolley lines going into the richest valleys, and best of rural social conditions, is not California in a position to show the world a reversal of the usual cityward trend?

The question will be answered affirmatively, I believe, only when to California's wonderfully productive soils and matchless climatic, social and educational advantages is added one other thing, and that is greater commercial advantage. The farmer has been encouraged to be a farmer and to remain a farmer that he might be "farmed" by urban interests.

"Produce more that we may live cheaper," is the cry. "We shall produce better and demand fairer treatment by the large interests in control of the markets of the country and a fairer share of the consumer's cost of bread and butter," is the answer. When that demand is met, I say, then will the attractiveness of the country claim its own and Rural California grow faster than Urban California. The demand will never be granted by the urbanite, however, until it becomes more insistent, and it becomes more insistent as the farmer gains in intelligence and as he grasps that wonderfully effective weapon, "cooperation."

Again, may I be permitted just a word of warning—not a knock—for the newcomer. I grant that some farmers are farming too extensively, and not enough intensively. Therefore shortage of capital and equipment prevents best results. But don't take the intensively small farmed idea too seriously. There has been suffering because of smooth agents preaching great profits from little land. Intensive cultivation means extensive knowledge and experience. Unless you have these don't throw up a salaried position and attempt the making of a living from an acre or two acres or four acres of even California soil. Read Dean Thos. F. Hunt's advice to settlers.

PANAMA-PACIFIC, THE WORLD'S GREATEST EXPOSITION

Two great expositions are to be held in one state. In this our state is unique—is Californian.

You Can't Overwork the Electric Motor

This threshing outfit on the ranch of the Portland Cement Co., at Cement, California, consists of a little Giant No. 1 thresher, driven by a G-E Motor. It is operating the thresher at a constant speed saving both grain and money. You can't overwork, tire out or fag a

G-E ELECTRIC MOTOR For RANCH AND FARM

The electric motor is the ranchman's most faithful power servant—more reliable than any other form of power and, in the end, a great deal cheaper. There is no expense for repairs or replacements. The only cost is the current and that's getting cheaper and cheaper every day.

Threshing, baling, mixing concrete, sawing cord wood, pumping for irrigation, clipping horses and sheep—in these and a hundred ways the G-E Motor has proven its greater efficiency and economy for ranch operation.

Write today for illustrated booklets about ranching with electricity--they are free.

General Electric Company

Los Angeles Office:
124 West 4th Street
San Francisco Office:
Rialto Building

The General Electric Company will gladly answer all questions relating to the use of electric power for ranch and market garden irrigation.

Address nearest office. 4961

FRED L. BORUFF'S
Mission Olive Nursery
"NATURE GROWN TREES"

One, two and three years old. Variety and quality guaranteed.

"The olive is the best paying fruit grown in California"

FRED L. BORUFF San Fernando, Cal.

KIRKMAN'S
RELIABLE TREES

Trees that grow and bear true to name. Now booking orders for next season. Write us now about what you will want.

KIRKMAN NURSERIES
2525 Tulare St., Fresno, Cal.

CITRUS HEIGHTS NURSERY
SACRAMENTO, CAL.
We are booking orders for Citrus and Deciduous Trees of all kinds. Guaranteed true to name. Write us for prices.

When writing advertisers, mention The Cultivator.

Citrus and Tropical Fruits

THE CITRUS INDUSTRY

From less than 1,000,000 boxes of citrus fruits produced in 1890 the output of California has increased until this year it will be approximately 19,000,000 boxes, in carloads about 46,000, or, as we have before expressed it, not far from one carload every ten minutes, day and night, Sundays and all holidays, from one year's end to the other. The industry brings to California between $30,000,000 and $40,000,000 and is the greatest asset of any one of California's productive resources.

CITRUS FRUITS BRING MILLIONS
Millions in money, and really millions of people, over the boundaries of California.

There is invested in the citrus industry not far from $200,000,000 by 10,000 individual growers, and 100,000 people depend upon it for a livelihood. To produce this immense tonnage trees are planted on 200,000 acres. This industry has called into existence the greatest cooperative marketing organization in the world. It handles nearly 65 per cent of the citrus fruit of the state.

The greater proportion of it comes from some four or five of the southern counties, yet the Central California section is increasing its production with wonderful rapidity and its early fruit supplies most of the holiday trade. One peculiarity of the citrus industry is its wide range, for the fruits are produced from the extreme southern to almost the extreme northern limits of the state. This is proof of the wonderful blessing California has in her matchless climate.

THE OLIVE AND ITS OIL

The oldest fruit industry of California is that of the olive. At the San Diego Mission the first trees were planted in 1769, and from that point the industry has spread until there is scarcely a county in the state today which is not growing the olive. There are now in excess of a million and a half trees in the state. Florida has some 8,000 trees, Arizona a small number at the present time, but the industry there is rapidly developing. Besides these, three other states in the Union have less than 200 trees.

As an indication of the possibilities for growth of this industry, the United States in 1913 imported 3,946,076 gallons of olives and 5,840,357 gallons of olive oil. The annual value of the Mediterranean output is $8,000,000 less than it was 50 years ago. The number of bearing trees in California in 1912 was 612,804, non-bearing trees 85,911. Our yearly production is about 750,000 gallons of pickles and 250,000 to 300,000 gallons of oil.

The industry has increased wonderfully since the passage of the pure-food bill and prices have advanced until as high as $250 per ton has been paid for extra fine pickling fruit. However, the general price ranges from $100 to $150, while the price for oil olives is from $50 to $100.

SEMI-TROPICALS

Besides the citrus and the olive, California has a wonderful range of productions in fruits which do not grow in the other parts of the United States. Perhaps the one having the greatest promise at this time is the avocado. However, there are, among others, loquat, pomegranate, persimmon, cherimoya, mango, feijoa, sapota and guava.

CITRUS
TREES

Buy from the largest Citrus Nurseries in the World

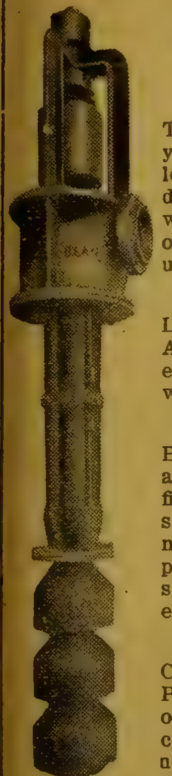
—and know what you are planting. Teague trees are better than others because scientifically grown. They are started right, grown right and shipped right. Ask for quotations.

We can supply all the STANDARD SORTS in almost any quantity—
ORANGES :: LEMONS
POMELOS

Teague trees are well rooted, strong and thrifty, free from scale, guaranteed true to name.

OUR BOOK "CITRUS FRUITS" — handsomely illustrated; a wealthy fund of accurate data —sent for 25c in stamps.

San Dimas Citrus Nurseries INC
ESTABLISHED 1890 BY R.M. TEAGUE
San Dimas, Cal. U.S.A.



Bean Turbine Pump

For Deep Well Work

Install a Bean Turbine Pump and your water problem is solved. It does the work when other types of pumps would be useless.

AUTOMATICALLY WATER-BALANCED, a feature every pump owner will appreciate.

PLENTY OF BEARINGS — they are placed every five feet. This insures perfect alignment and makes possible highest speed and greatest efficiency.

LINE SHAFT IS CENTRAL TO PUMP — entirely outside of discharge pipes and never comes in contact with water. No sand or grit can get in the bearings.

THREE PIPE DISCHARGE—the pipes being simply and securely bound together. This means strength, yet sufficient flexibility to insure satisfactory work in wells that are not perfectly straight.

DIRECT CONNECTED TO MOTOR—if desired.

Send for further information if you're interested in deep well pumps.

BEAN SPRAY PUMP CO.
West Julian St., San Jose, Cal.

Spraying Time

and there is no better spray than

Scalefoe

Not only for scale but nearly all insects, worms and bugs that infest plant life. It has been killing them for 15 years giving the greatest satisfaction without injury, but positive benefit, to the plant Write for circular with testimonials or better, try it.

Gallon can, 50c;
5-gal. can, freight prepaid, $2.00.

Must be mixed 20 parts water to one Scalefoe before using. making it very cheap. Write for prices in barrels delivered at your freight station.

SEEDS

At LOW PRICE and NO PRICE can Buy Better. Free Catalog.

West Coast Seed House

TOMPKINS & CO., Proprietors.
116-118 E. 7th St
LOS ANGELES

IRIS Illustrated catalog containing valuable information, and beautiful color plate, 15 cents.
List with prices on over 200 varieties free upon request.
THE DEAN IRIS GARDENS, Moneta, Cal.

FEDERAL AID TO CALIFORNIA AGRICULTURE

The Federal department of agriculture has been kind to California. It has not given all we have asked, yet as a rule every request for aid which has shown the need to be great has been responded to favorably.

U. S. Experts. Usually experts are assigned to work along certain lines of the various industries and work in affiliation with the growers. Long continued experiment work as a rule is turned over to the state experiment station staff. Working with the force employed by the state experiment stations are many experts of the federal department. In times of special need like the pear blight campaign, citrus decay investigations, soil troubles, etc., experts have been put into the field and special reports issued in a very short time.

The division of pomology has established and maintains plant introduction gardens at Chico which have brought to the coast thousands of plants from all portions of the world and these are distributed to residents of the state who will give them proper attention and report to the department on their behavior.

Of course, the live stock sanitary board, soil survey and other divisions of the department of agriculture maintain permanent offices in San Francisco and Los Angeles. Even to list these various activities would require far more space than is at the command of the Cultivator this week.

Year Book and Bulletins. The most important publication of the department of agriculture is its year book which may be secured by writing your congressman or either senator for California. Various divisions of the department issue special bulletins, some of which may be had free by writing Division of Publications, Washington, D. C.

Weather Bureau. Probably one of the more important services rendered to agriculturalists of the state is that of the weather bureau of the department of agriculture. The bureau maintains stations at Eureka, Red Bluff, Sacramento, San Francisco, San Jose, Fresno, Independence, San Luis Obispo, Los Angeles and San Diego. While reports are given of weather conditions in practically every section of the state, the principal service rendered is in warnings of storms and frosts which, through cooperative organizations, are circulated by telephone to growers in all parts of the state.

Land Offices. The department of the interior of the federal government of course maintains its land offices in the state. These are located as given below: Eureka, Independence, Los Angeles, Sacramento, San Francisco, Susanville, Visalia.

There is one serious flaw in the helpfulness which the government and state should give to agriculturists of California and especially to newcomers, and that is in the lack of means to give out any information as to the values of government lands. One of the worst features which has sprung up in this state is that of land "locators." There may be honest locators, but as a rule the settler who has trusted to them has complained bitterly of unjust treatment. From the nature of things the seeker for government land is not the one who has capital to make investigations for himself. He is too liable to take the word of the unscrupulous locator and file upon land which, when his own engineer places the corner stakes, reveals itself as only a rock pile or on the mountain side instead of in the rich valley which the locator had described. The claim has been set up that we are overridden with commissions and officials, but here certainly is an opportunity for great help, officially, to the prospective settler.

Farm Advisers. The newest service rendered by the federal government is through the enactment of the educational extension bill by which the state receives a large fund for employing county agricultural advisers. This work is done through the agricultural college of the state university and is under direction of B. H. Crocheron, State Leader for California, Berkeley. Each county applying for a farm adviser must first organize a farm bureau with centers in all por-

(Continued on Page 335)

Horsepower

Your horses can pull bigger loads if you grease your wagons with

MICA AXLE GREASE

Its the mica that does it. It works into the microscropic "roughness" of the spindle and makes a smooth bearing surface, perfectly lubricated, on which the wheel revolves without friction. No hot boxes when Mica Axle Grease is used. A little goes a long way. Ask your dealer for it.

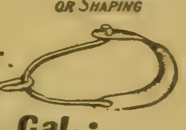
Standard Oil Company
(CALIFORNIA)

Canvas Bags

Fruit Picking Bags
Cotton Picking Bags
Wool Bags Water Bags
Feed Bags Ore Bags
Game Sacks Mail Pouches

Canvas Irrigating Hose
Fumigating Tents

The Wm. H. Hoegee Co., Inc.
Los Angeles



EXCELSIOR HOOK FOR CITRUS AND OTHER LIGHT PROPPING

TREE SUPPORT

SPRING LOCK HOOK FOR DECIDUOUS PROPPING AND TRAINING OR SHAPING

HOOKS ARE MADE OF FLAT GALVANIZED STEEL, 1¼ INCHES WIDE.

Prices per Hundred F. O. B. Pomona, Cal.:
Excelsior Hooks, $1.50 ***Spring Lock, $3.00***
Wire Extra

Better and Cheaper Than Unsightly Props.
Will Last as Long as the Trees

Ranchers Mfg. Co. F. E. Whitehouse Manager **Pomona, Cal.**

Water Pipe

We handle all sizes of the best quality of second-hand, standard pipe and screw casing. Material guaranteed. Prices reasonable. Mail us your inquiry today.

Shecter Pipe Works

Cor. Beale & Howard Sts. San Francisco Cal.

—control
Red
Black
Purple
and other.
SCALE
by
spraying
with
ZENO

The Most Efficient and Cheapest Method

ZENO *is more efficient than fumigation* because it controls ALL the insects controlled by fumigation at one-third the cost and is effective against four times as many citrus pests, such as Scale, Red Spider, Silver Mites, Black Fungus or Smut, Lichens and other fungus on the bark. It leaves the tree in a thoroughly renovated, clean, healthy condition.

ZENO *is not an experiment* but has been used for controlling pests on Citrus and Olive trees for the past five years. It is being used by the largest and most progressive growers in Southern California.

ZENO *is a perfect chemical compound* containing no free materials Is not caustic and is safe and easy to use. Requires no agitation, mixing instantly with water, and remains in a perfect emulsion without separating in any way.

For Sale by
Producers' Supply Co., Los Angeles; Rialto Protective Association, Rialto; Kessler Brothers, El Cajon; Harry Highfield, La Mesa.
Or by the Manufacturers,
Standard Chemical Company
231 Franklin St., Oakland, Cal.
For information and demonstration in Southern California, address T. O. McClure, Hotel Hayward, Los Angeles.

Deciduous Fruit Culture

OUTPUT OF FRUITS AND NUTS

California produces an average of about 60,000 to 70,000 tons of raisins. Spain produces about 20,000, Turkey about 30,000, while of the so-called Greek currants there are produced in excess of 150,000 tons. California exported in 1911 over 18,000,000 pounds.

The output of other cured fruits, in tons, is: Apples 2,500, apricots 9,700, figs 4500, peaches 20,000, prunes 45,000.

Besides this the output of deciduous fresh fruits in carloads varies from 12,000 to 17,000.

The total output of almonds will vary from 1600 to 3000 tons, while walnuts usually crowd close to 12,000. This year the output will be smaller, between 9000 and 10,000 tons.

ACRES COVERED WITH DRYING PRUNES

The state produces about 150,000,000 pounds of cured prunes annually. The greatest production was in 1902, wit the enormous total of 195,000,000 pounds.

ORGANIZATIONS SUPPORTED BY THE STATE

Some of the organized activities of the state government which are encouraging agriculture are:

Board of Agriculture, Sacramento. A. L. Scott, President; C. W. Paine, Secretary. Holds state fairs at Sacramento annually, gathers statistics and make reports as to agricultural progress. Geo. Robertson, statistician.

Dairy Bureau, 25 California Street, San Francisco. F. W. Andreasen, Agent and Secretary. Encourages sanitary dairying and has police power in enforcing sanitary dairy laws.

Forester, G. Morris Homans, Sacramento. Preserves existing forests and encourages forest extension. At request of private owners examines timber lands and sites for planting.

Highway Commission, Forum Bldg., San Francisco. W. R. Ellis, Secretary. In charge of constructing and maintenance of state highways under $18,-000,000 bond issue and fund from auto license tax.

Horticultural Commission, Capitol, Sacramento. A. J. Cook, Commissioner. State Insectary, Capitol Park, Sacramento. Harry S. Smith, Superintendent. Quarantine Office, Room 11, Ferry Building, San Francisco; Frederick Maskew, Chief Deputy Quarantine Officer. Offices Quarantine Deputies: Hall of Records, Los Angeles; Court House, San Diego. Has police powers in enforcing horticultural laws. Also holds semi-annual conventions of fruit growers. Issues bulletins free to citizens of California.

Reclamation Board. V. S. McClatchie, President; W. T. Ellis, Marysville, Secretary.

Panama-California and Panama-Pacific International Exposition Commissions. Have to do with expenditure of moneys appropriated for expositions at San Diego and San Francisco.

Immigration and Housing Commission. S. J. Lubin, President; Paul Scharrenberg, Secretary. 525 Market St., San Francisco. Encourages sanitary housing of labor camps. Has police powers.

Redwood Park Commission in charge of California Redwood Park of 3,800 acres in Santa Clara and Santa Cruz counties.

Veterinarian, Dr. Chas. Keane, San Francisco. Dr. W. B. Rowland, Pasadena, Assistant. Has charge of employment of live stock inspectors, has quarantine powers and general enforcement of live stock sanitary laws.

Viticultural Commission. Nine members. President, C. J. Wetmore; Secretary, E. M. Sheehan, Capitol, Sacramento. Recently created commission to encourage grape industry.

Association County Horticultural Commissioners. R. S. Vaile, Riverside, Secretary. Semi-official organization of county officials to secure more uniform enforcement of horticultural laws.

University of California, College of Agriculture, Berkeley. Thos. Forsyth Hunt, Dean. School for agricultural students at University Farm, Davis; H. E. Van Norman, Vice-director. Experiment Station at Berkeley, Thos. F. Hunt, Director; branches at Davis, Kearney Park, Fresno; Imperial Valley Station at El Centro, W. E. Packard in charge, and Forestry Experiment Station, Santa Monica. Southern California Experiment Station, Dr. Herbert J. Webber, Director, with Pathological Laboratory at Whittier.

One of the most helpful features of the state experiment station and college of agriculture work is probably the bulletins. Some of the most val able works yet issued as to walnut olives, diseases of the orange ar lemon, deciduous fruits, etc., and pra tically all other lines of agricultur activities have been published by tl state experiment stations. These ma be secured by writing to the directe of the experiment station at Berkele and asking to be placed on the reg lar mailing list, or perhaps better, sta ing the particular line along which i formation is desired.

Correspondence courses in agricu ture are conducted by University E tension Division, Berkeley.

Farmers' Short Courses at Unive sity Farm, Davis. Address Dean, Co lege of Agriculture, Berkeley.

Polytechnic School, San Luis Obisp Leroy B. Smith, Director.

VOLUNTARY ASSOCIATIONS

The following is a partial list of a sociations organized to advance th interests of a particular feature agricultural industry:

California Agricultural District Fai Association. President, E. E. Ha Pleasanton. Secretary, W. J. Daki Pleasanton.

California Association of Nurser men. President, D. W. Coolidge, Pas dena. Secretary, Henry W. Kruck berg, Los Angeles.

California Creamery Operators' A sociation. President, A. R. Bate Secretary, A. P. Ferguson, Turlock.

California Creamery Managers' A sociation, 119 Clay Street, San Fra cisco.

California Draft Horse Breeders' A sociation. President, Henry Wheatle

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Napa. Secretary, J. I. Thompson, Davis.

California Farmers' Protective League. Arthur Dunn, Sacramento.

California Grape Protective Association, 12 Geary St., Sacramento.

California Live Stock Breeders' Association. President, A. W. Morris, Woodland. Secretary, F. J. Sinclair, 628 Montgomery St., San Francisco.

California State Beekeepers' Association. President, A. B. Schaffner, 4232 W. First St., Los Angeles.

California State Dairymens' Association. President, J. W. Guiberson, Corcoran. Secretary, S. A. W. Carver, Los Angeles.

California State Floral Society. Secretary, Mrs. Henry P. Tricou, 882 Grove St., San Francisco.

California Swine Breeders' Association. President, L. S. Murphy, Perkins. Secretary, J. I. Thompson, Davis.

California Wool Growers' Association. President, C. A. Kimball, Hanford. Secretary, F. A. Ellenwood, Red Bluff.

Dairy Association of California. President, J. W. Guiberson, Corcoran.

Deciduous Protective League. Manager, J. W. Jeffrey, 408 Ochsner Bldg., Sacramento.

Farmers' Education and Cooperative Union of America. President, Wm. McNaught, Morgan Hill. Secretary, Fred Millard, Los Gatos.

Farmers' and Fruit Growers' Federation. F. O. Wallschlaeger, Secretary, 740 Consolidated Realty Bldg., Los Angeles.

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A greater proportion of dried apricots are exported than any other of our cured fruits. Production is about 20,000,000 pounds annually.

Holstein Breeders' Association of California. Secretary, Jas. W. McAlister, Chino.

State Grange Patrons of Husbandry. Master, E. T. Pettit, Cupertino.

COOPERATIVE MARKETING

The following are cooperative marketing associations which are statewide in scope:

California Almond Growers' Exchange. President, G. W. Pierce, Sacramento. Secretary, J. B. Wrangham, Sacramento.

California Associated Raisin Company. Manager James Madison, Fresno.

California Cured Fruit Exchange. Manager, H. M. Ellis, 417 Market St., San Francisco.

California Fruit Growers' Exchange. Manager, G. Harold Powell, Consolidated Realty Bldg., Los Angeles.

California Walnut Growers' Exchange. President, C. C. Teague, Santa Paula. Secretary, C. Thorpe, 313 Fay Bldg., Los Angeles.

Lima Bean Growers' Association. Manager, Perry A. Cole, Oxnard.

Citrus Protective League. Secretary, F. O. Wallschlaeger, 740 Consolidated Realty Bldg., Los Angeles.

Fruit Growers' Supply Company. Manager, B. N. Hutchins, Consolidated Realty Bldg., Los Angeles.

It is impossible to get a full list of farmers clubs and similar organizations, and it would be impossible to give a complete list of all the cooperative marketing organizations in this state. One of the greatest of these is the California Fruit Growers' Exchange which handles twenty-five or thirty million dollars' worth of citrus fruits for its members each year. There are other growers selling organizations, and as a rule these organizations are proving money savers for their members. While there have been some mistakes, the general trend of the agriculturists of the state is toward more cooperation.

COMMERCIAL ORGANIZATIONS

To those who wish information regarding the various counties of the state we would suggest writing the principal commercial organization of the county. The list below gives the county organization or the more important organization within each county of California, excepting the three counties of Alpine, Modoc and Mono, which counties do not report such organization.

Abbreviations used: Co. C of C, County Chamber of Commerce; B of T, Board of Trade.

County, Organization, and Address.
Alameda, Alameda C. of C., Oakland.
Alpine.
Amador, Amador Co. C. of C., Jackson.
Butte, Business Men's Ass'n, Oroville.
Calaveras, C. of C., San Andreas.
Colusa, C. of C., Colusa.
Contra Costa, B. of T., Martinez.
Del Norte, Commercial Club, Crescent City.
Eldorado, El Dorado Co. B. of T., Placerville.
Fresno, B. of T., Fresno.
Glenn, C. of C., Orland.
Humboldt, Humboldt C. of C., Eureka.
Imperial, Imperial Valley C. of C., El Centro.
Inyo, C. of C., Bishop.
Kern, Kern Co. B. of T., Bakersfield.
Kings, Kings Co. C. of C., Hanford.
Lake, Business Men's Ass'n, Lakeport.
Lassen, Big Valley C. of C., Bieber.
Los Angeles, L. A. C. of C., Los Angeles.
Madera, C. of C., Madera.
Marin, C. of C., San Rafael.
Mariposa, C. of C., Mariposa.
Mendocino, C. of C., Ukiah.
Merced, Merced Co. C. of C., Merced.
Monterey, C. of C., Salinas.
Napa, C. of C., Napa.
Nevada, C. of C., Nevada City.
Orange, C. of C., Santa Ana.
Placer, Promotion Committee, Auburn.
Plumas, C. of C., Quincy.
Riverside, C. of C., Riverside.
Sacramento, C. of C., Sacramento.
San Benito, C. of C., Hollister.
San Bernardino, C. of C., San Bernardino.
San Diego, San Diego Co. C. of C., San Diego.
San Francisco, C. of C., San Francisco.
San Joaquin, C. of C., Stockton.
San Luis Obispo, C. of C., San Luis Obispo.
San Mateo, B. of T., San Mateo.
Santa Barbara, C. of C., Santa Barbara.
Santa Clara, C. of C., San Jose.
Santa Cruz, C. of C., Santa Cruz.
Shasta, C. of C., Redding.
Sierra, C. of C., Downieville.
Siskiyou, C. of C., Yreka.
Solano, Promotion Committee, Fairfield.
Sonoma, C. of C., Santa Rosa.
Stanislaus, B. of T., Modesto.
Sutter, C. of C., Yuba City.
Tehama, C. of C., Red Bluff.
Trinity, C. of C., Weaverville.
Tulare, Tulare Co. B. of T., Visalia.
Tuolumne, Tuolumne Co. C. of C., Sonora.
Ventura, C. of C., Ventura.
Yolo, C. of C., Davis.
Yosemite, National Park, Yosemite.
Yuba, C. of C., Marysville.
Other Associations—For information regarding the state in general address California Development Board, Ferry building, San Francisco.

Let us learn to be content with what we have. Let us get rid of our false estimates, set up all the higher ideals —a quiet home; vines of our own planting; a few books full of the inspiration of a genius; a few friends worthy of being loved and able to love us in return; a hundred innocent pleasures that bring no pain or remorse; a devotion to the right that will never swerve; a simple religion empty of all bigotry, full of trust and hope and love —and to such a philosophy this world will give up all the joy it has.—David Swing.

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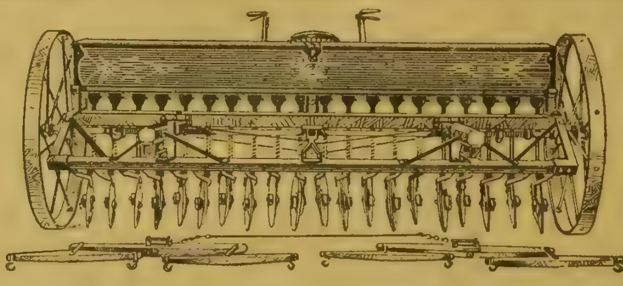

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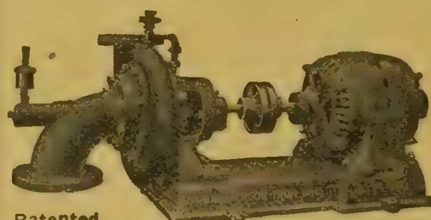

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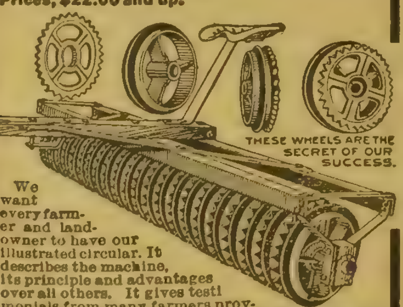
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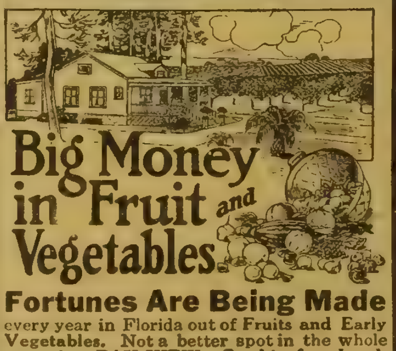
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Small Fruits and Vegetables

THIS MONTH IN SOUTHERN CALIFORNIA

Written for California Cultivator
By O. M. Morris

It is high time that all vegetables for early winter crops be planted. Most anything in the ordinary class is in order, in fact, everything but vine seed. For small gardens or commercial planting the following may be planted with safety: Beets, carrots, broccoli, Brussels sprouts, cabbage, cauliflower, chard, lettuce, onions, parsley, spinach, radish, peas and the hardy varieties of beans, such as Refugee, Canadian Wonder, Green Pod, Early Six Weeks and Early Valentine. Horseradish, rhubarb, chives and onion sets can also be planted with a reasonable assurance of good results.

We recommend the following list of best varieties for planting at this season: Lettuce, New York and Wonderful; onions, White Cream, Silverskin and Bermuda; cabbage, Winningstadt, Cannon Ball and Danish Ball Head; turnips, for a large turnip, Purple Tops; for family use, Early Snowball and Golden Ball, sweeter and of finer quality. Rutabagas are becoming more popular each year. Brussels sprouts and kohl rabi are two vegetables which have been greatly neglected and which succeed splendidly if planted at this season of the year. Another vegetable which deserves more attention is the red cabbage. Each year finds a more ready market for it at good prices. Two popular varieties are the Zenith and Red Drumhead. The leading varieties of cauliflower are the Dry Weather and California Pearl. These are large headed varieties being what are termed well-covered heads, that is, the leaves fold over and protect the head. Best varieties of carrots on the market are Ox Heart and Chanteney or Half Long. For table beets, plant Detroit Blood or Egyptians.

The use of the hoe is too often disregarded; yet it is one of the most valuable tools for garden purposes. The use of the hoe will obviate the necessity for a large number of waterings. A loose pulverized soil is far better for garden plants than a continually wet soil. With a fine loose earth mulch, gardening gives greater success than with a heavy, hard and often sodden surface, the result of frequent waterings. Further, excessive water considerably weakens garden plants, and the more water they get the more they want; in an undrained soil, excessive and constant waterings result in weakened plants, a decaying root system, and loss of good and useful plants.

THE KITCHEN GARDEN

A great trouble with many kitchen gardens is crowding plants too close together, which gives poor results. No plant can reach a maximum growth without plenty of room. It requires room to make quality. Selected varieties of known quality are better than a lot of novelties, which too often are disappointing. After furnishing ground, fertilizer and labor, one should be reasonably sure that the variety is one that can be depended upon. What to raise in the garden should be a matter of the family likes, and a list of varieties should always be selected with this object in view.

Roses and other growing plants should now be carefully watched for any signs of the usual aphis troubles. These insects considerably enfeeble the young growths and are productive of considerable loss. Wherever observed the aphids should receive frequent sprayings and washings with tobacco wash prepared from waste tobacco, or with any of the tobacco extract preparations. For mildew on roses and other plants, frequent and liberal dustings of sulphur will be necessary. All useless shoots on roses and shrubs of all varieties should now be rubbed off, so as to direct the sap into useful and necessary channels.

One of the recognized consequences of subsoiling is an increased feeding area for the roots; and thus, in some instances, manure is not always necessary. Practical fruit growers point to portions of their orchards which have been in full bearing for nine or ten years, which were subsoiled before planting, and which have never received an ounce of manure. The fruit crops from such orchards are invariably good, and often in excess of other parts of the orchard, which were not so subsoiled.

Surplus and misplaced shoots of roses should be removed as they appear, and where fine blooms are desired the buds thinned. Newly-planted roses should be mulched, and a little care taken in the arrangement of the shoots, especially on standard specimens. An occasional dusting with flowers of sulphur will prevent mildew.

Where tomatoes have been planted, their energies should be restricted to three or four main growths, and all laterals pinched out, leaving only the flowers and flower buds.

VEGETABLES THE FINEST
The Chinaman formerly grew most of our vegetables; now we grow them—fresher and finer.

The Ornamental Garden

THIS MONTH IN SOUTHERN CALIFORNIA

Written for California Cultivator

By O. M. Morris

The principal work in the flower rden at this time is the forcing of rysanthemums with strong fertiliz- s and plenty of water. If large wers are desired one must not glect disbudding and thorough care om now until height of blooming sea- n. If the plants are not very robust ey should be staked or tied up and otected from the wind. In this cli- nate the sun is very warm and for est colored flowers it may be neces- ary to pull a cloth over the blooms uring the day, using the same cover- ng during foggy nights. This will reatly increase the value and ap- earance of the flowers.

Roses should be heavily trimmed ack, fertilized and given as much at- tention as possible to insure good flowers during the early winter.

Perennials planted last month or the month before should be nearly ready to transplant now, at least most of them. One may transplant to permanent beds, or put small beds ready for planting out in the spring.

Nearly all varieties and the hardy annuals can be planted for winter and early spring bloom. California poppies, in fact, any of the poppies, can be put in at once if the ground is well irrigated and kept moist until the winter rains come. We have heard many complaints of poor results from hunnemania, or Giant Yellow Tulip Poppy. In nearly every instance the failure is the result of too deep planting of the seed and keeping the ground too wet. This is an upland poppy of the bush form and it must not be kept too moist or it will damp off and rot before making a start. After the plant puts out six to eight leaves it will be perfectly safe and will stand a great deal of moisture, but prior to that an excess of moisture will result in much damage.

The following list is timely for this season's planting: Centauria, scabiosa, snapdragon, linum, schizanthus, linaria, mignonette, coreopsis, gaillardia, gypsophila, and sweet peas for winter blooming. The latter will give an abundance of flowers during the colder season when cut flowers are always scarce. Phlox drummondii has proved to be a splendid good flower, standing our winters perfectly and blooming for several months. The flowers, when cut, last for a number of days. Pansies and stocks should be planted for early winter transplanting. These will begin to bloom in about four months. Seed not to be planted too deep. It should be barely covered, not over one-eighth of an inch. Where stocks have not succeeded well after transplanting, would advise planting the seed in permanent beds and we doubt not they will succeed. This latter method will require a more liberal planting of seed for a good stand, but the surplus plants may be thinned out and replanted. In light soil it will not be necessary to cover the beds but on heavy soil seed should be covered with a sandy silt or loam to prevent baking. The best bed of stocks seen this year were those started directly in the bed where they are to remain.

Bulbs are now arriving and the usual line will be available, contrary to previous reports. Several large shipments have arrived already and others are following, so that there will probably be no shortage. The sooner the supply of bulbs is secured the better selection will be obtained. Hyacinths, tulips, and daffodils will give better results if planted early.

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President Wilson:

"I was most gratified to hear of the nomination of former Mayor James D. Phelan for United States Senator. He has been in close touch with the administration in Washington, and has heartily supported the policies which have been inaugurated for the benefit of the people—

"Therefore, I appeal not only to Democrats, but to all independent citizens to rally to the support of the men who have expressed a willingness to sustain the administration and carry on the work designed for the benefit of all."

Woodrow Wilson

JAMES D. PHELAN

James D. Phelan was three times Mayor of San Francisco

Prevented renewal of franchise of old Geary street railway, San Francisco, thus making present successful municipal line possible.

Appointed first woman who ever held an important public position in San Francisco.

Served as regent of the University of California.

Commissioner to secure re-enactment of the Geary Asiatic Exclusion Law.

Commissioner for Hetch Hetchy legislation before Congress to secure a mountain water supply for the cities around San Francisco Bay.

Commissioner to Europe by appointment of President Wilson to support the United States Government's invitation to foreign countries to participate in the Panama-Pacific Exposition.

Declined ambassadorship to one of the great European nations, preferring service at home.

Led in the fight for a new charter for San Francisco, which insured home rule, civil service reform, responsible government, municipal railroads.

Raised standard of pay for laborers in the city employ.

Head of the San Francisco Relief Committee in the disaster of 1906. Appointed by the President custodian of the relief fund aggregating $10,000,000.

Worked and spoke before the Legislature for the enactment of an anti-alien land ownership law.

Experienced, capable and untrammelled, he would have but one client in Washington, the people of his native State.

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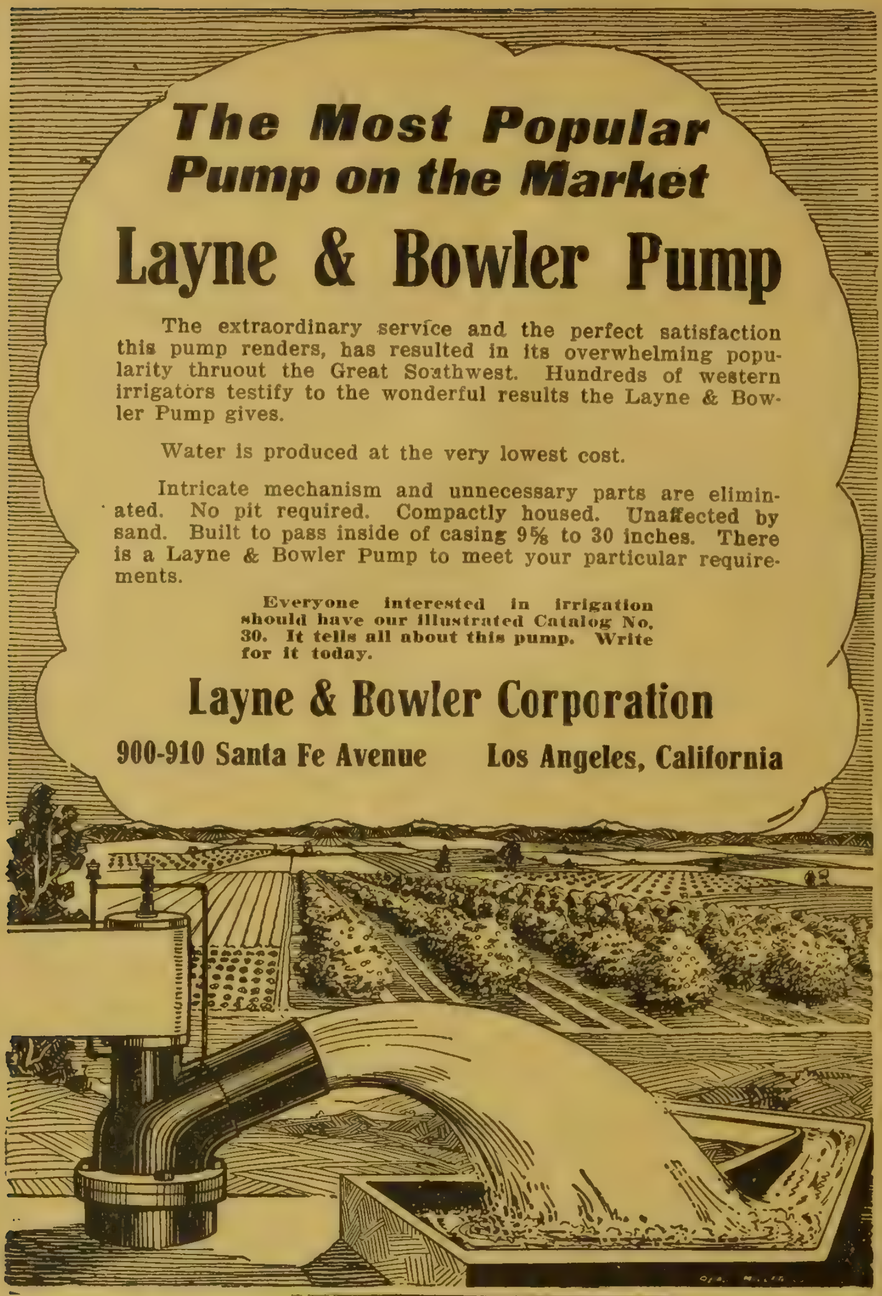
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Melilotus
Burr Clover
Vetches

produce humus and nitrogen in the soil — the two big essentials in groves and orchards. From our studies of the needs of the citrus belt this year, we are strongly recommending the following:
FENUGREEK: is a rank and rapid grower, producing successfully on poor soils.
MELILOTUS INDICA and BURR CLOVER are also adapted to heavy and poor soils as they produce a deep and heavy root system resulting in the breaking up and in the porosity of the soil.
VETCHES: We are headquarters for imported and Oregon vetch.
We cannot too strongly advocate the inoculation of seed for best results. Hundreds of our patrons testify that the use of

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300% Crops

has increased their crops from 200 to 300%, thus giving more humus for the soil and more nitrogen -- gathered from the air by the nitrogen gathering bacteria and deposited in the soil through the nodules they form. The cost—less than $2.00 per acre. For booklet on *Farmogerm*, advice on Cover Crops and Prices, write to Dept. C

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WRITE FOR IT TODAY —
September, October, November
are three of the best months we have for PLANTING
Rhubarb and Cactus If planted now you should derive good results by spring
J. B. WAGNER - Pasadena, Cal.
The Rhubarb - Berry & Cactus Specialist.

General Agriculture

IN CALIFORNIA

Sugar Beets

California is the home of the sugar beet industry of America. The first factory was that at Alvarado, in Alameda County. Now there are 13 factories producing about 170,000 tons of sugar annually. Last year's acreage was 115,330, and the beets worked up 1,100,307 short tons. The factories operating are located at Alvarado, Oxnard, Chino, Hamilton City, Spreckels, Betteravia, Anaheim, Huntington Beach, Corcoran, Los Alamitos, Visalia, and two at Santa Ana.

With the European war stopping exports of sugar, it is presumed the coming year will give a great impetus to this industry. At the present time there is some difficulty in securing the seed required for another year, but we are told that the sugar companies are making an effort to secure a supply from Holland which will be ample for the coming year's output.

Sugar beets brought to the growers last year $5,000,000.

SUGAR BEETS AND WORLD'S GREATEST BEET SUGAR FACTORY
California produces more sugar than any other state of the Union.

Rice

California has hardly been considered a rice-producing state, but we are told that the coming year will see a planting of at least 15,000 acres, which will yield possibly as high as 3,000 pounds per acre. California rice has won gold medals until it has shown its ability to produce fine quality of grain. The principal producing section is in Butte County. The value of rice harvested in California this year will probably be close to $1,000,000.

Cotton

The Imperial Valley has proven itself a wonder in the production of high-grade cotton. The staple is longer and finer than that produced in the South. The financing of the crop this year is proving a serious matter because of the stoppage of exports. Bankers and others are now encouraging the "buy a bale" movement, and it is predicted that the situation will be materially cleared within a few weeks. The state has now an acreage of about 26,000. The production is somewhat under a bale to the acre; probably between 16 and 18 thousand bales will be produced. Mexico, just over the line, is producing as much more.

Hay

There are 20,000 farms in California growing alfalfa. On these 20,000 farms there are 484,134 acres producing 1,639,707 tons, valued at about $13,000,000.

Timothy is not considered a California crop, yet there are reported to be 13,000 acres of timothy in this state, producing some 20,000 tons. Of other tame and cultivated grasses we produce 119,000 tons.

Our great hay crop, however, is the ordinary "grain hay," principally barley. Of this crop we produced about two and a half million acres, and the output is valued at nearly $52,402,000.

Beans

California produces of lima beans over 1,100,000 sacks per year, which bring to the state in coin between $4,000,000 and $5,000,000. Pink beans are next in importance, the state producing 350,000 sacks, valued at approximately $1,000,000. White beans, 120,000 sacks, valued at a half million dollars; blackeyes and other varieties, a half million sacks, valued at over a million and a quarter dollars. This makes the bean crop of the state net to the growers about $7,000,000.

Onions

The output of the state in onions is nearly 2,000,000 sacks, netting to the producers $2,750,000.

Potatoes

One of California's greatest crops is the Irish potato. Nearly 9,000,000 sacks are produced, and while prices vary greatly, approximately we may say they net to the growers $10,000,000 annually.

Sweet potatoes likewise are a great product, though much less in quantity than Irish potatoes, and bring to the state $1,200,000.

Seeds

In the production of garden seeds California is one of the best and most favored sections, but there are no very accurate figures as to the output. The principal seeds which do well in this state are lettuce, onions, radishes, sweet peas. Two and a half million dollars is brought to the state because of this industry.

Hops

Sacramento County is the greatest hop-producing county of the state. It has a total output of about 35,900 bales. Sonoma comes next with 35,700 bales, then come Yuba and Yolo, Mendocino and Lake, also great producers of hops. All told, the state produces about 117,770 bales.

Grains

California was at one time the greatest producer of wheat in the country The banner year was 1899, when she produced 30,000,000 bushels. Since ther there has been a gradual decrease until the year 1913 harvested but slightl in excess of 4,000,000 bushels. This year the production is far greater and fortunately, is bringing a good price.

Barley, on the other hand, has ver materially increased in production Taking the same year, 1899, for a start er, the state produced 14,000,000 bushels. This greatly increased until 1910 when 43,000,000 bushels was reached The year 1913 produced about 33,000,000 bushels, and while the presen year's output breaks all past records figures as to exact output are not ye obtainable.

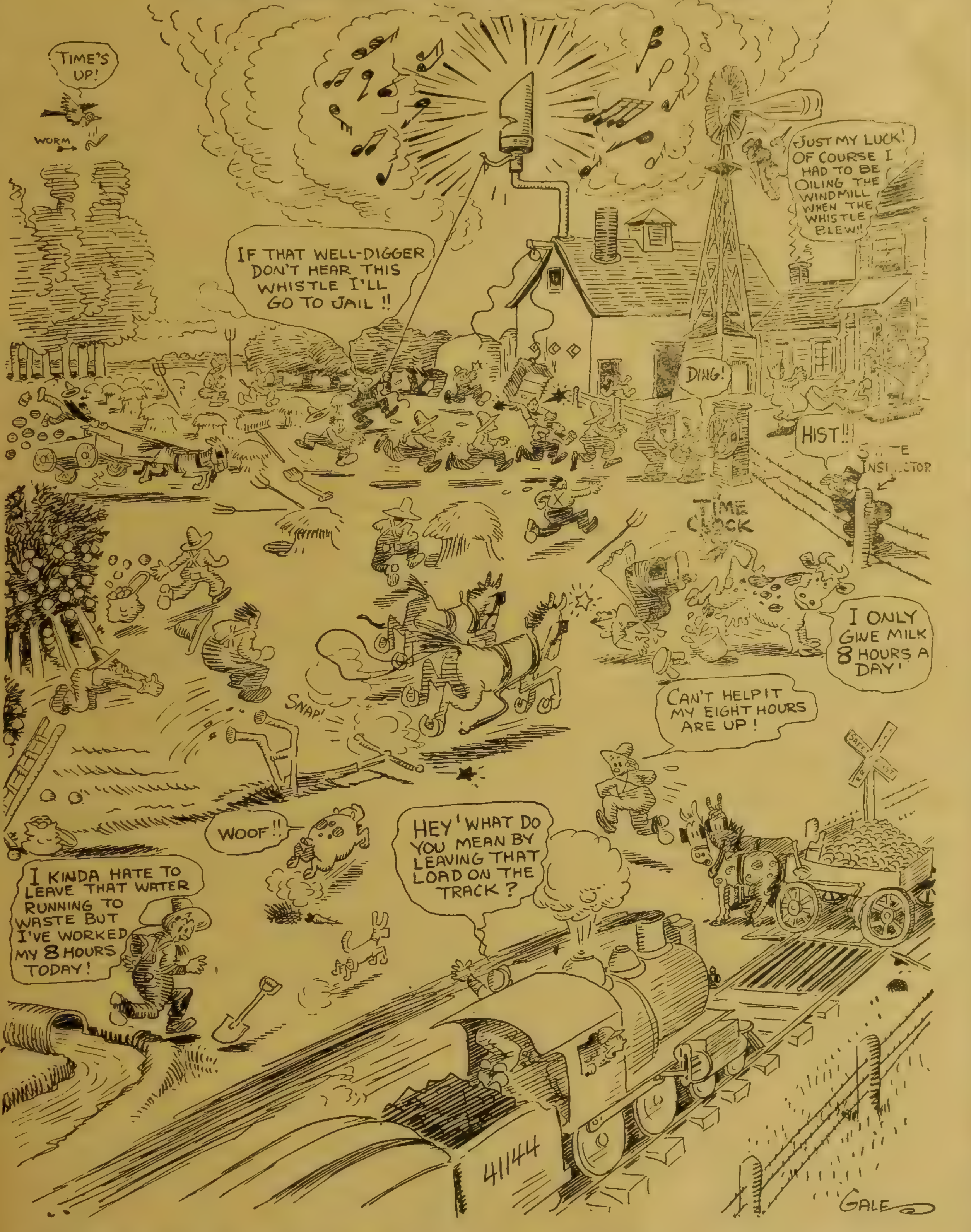
The production of oats has likewis materially increased until it now varie from seven to eight million bushels annually.

Corn

Of corn, though we are not generally considered a corn state, we produce close to 2,000,000 bushels. Last year's output was 1,815,000 bushels.

A farmer cannot make a more profitable investment than to buy a gallon of good implement paint and have it always on hand. Paint the wagon, the binder tongue, the plow tongues, the walking plow haudles, the doubletrees, every thing that needs protection from the elements in the way of machinery should be kept painted. As long as a good coat of paint adheres to wood it will last without checking or decay. It will also keep the iron from being eaten up with rust.

THE EIGHT-HOUR WHISTLE ON THE FARM.


TIME'S UP!
WORM
JUST MY LUCK! OF COURSE I HAD TO BE OILING THE WINDMILL WHEN THE WHISTLE BLEW!!
IF THAT WELL-DIGGER DON'T HEAR THIS WHISTLE I'LL GO TO JAIL !!
DING!
HIST!!
STATE INSPECTOR
TIME CLOCK
I ONLY GIVE MILK 8 HOURS A DAY!
SNAP!
CAN'T HELP IT MY EIGHT HOURS ARE UP!
WOOF!!
HEY! WHAT DO YOU MEAN BY LEAVING THAT LOAD ON THE TRACK?
I KINDA HATE TO LEAVE THAT WATER RUNNING TO WASTE BUT I'VE WORKED MY 8 HOURS TODAY!
41144
GALE

BIRD'S-EYE VIEW OF THE SOCIALIST PLAN FOR CALIFORNIA AGRICULTURE.
Vote "NO" on Universal 8-Hour Law, Proposition No. 3.

ELEGY WRITTEN IN A CALIFORNIA FARM YARD

Written for California Cultivator
By Contributor from El Centro

The whistle shrieks to end the eight-hour day;
  The teams and cows bound swiftly o'er the lea;
Homeward the farm-hand takes his legal way,
  And leaves the chores to Mother and to me.

Now fades the harvest profit from my sight,
  And all the world a penal sentence holds,
Save when Old Sol my year's crops blight
  And Socialists control the heat and cold.

Save where, in yonder pillow-cushioned bower,
  My resting plowman does to the cook complain,
That echoes of my toil to beat a shower,
  Molest his leisure there safe from the rain.

Ground Limestone
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Agricultural
Purposes

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WESTERN ROCK PRODUCTS COMPANY SAN FRANCISCO

Our ground limestone for fertilizing is made of the highest quality of limerock obtainable, is an honest material, honestly prepared. It is ground to that fineness which the Agricultural Department of the University of California recommends as rendering the greatest efficiency. Ground limestone sustains the fertility of the soil, corrects acidity, makes clay and clay adobe soils looser and easier to cultivate, etc. You can get prompt deliveries from us either in bulk or packed in 100-pound sacks. Write us for further information, prices, terms, etc.

Western Rock Products Co.
Balboa Bldg., San Francisco

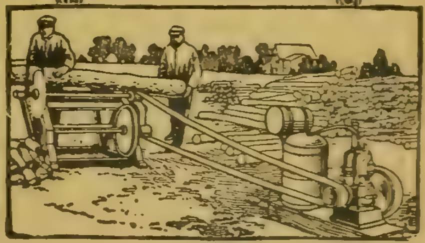
Light Weight
Cushman Engines
Best for Heavy Sawing

John Dare, Oroville, Cal., writes: "I have sawed about 350 tiers of wood with my 4 H. P. Cushman, and haven't had to make any repairs or lose any time. It is in as good shape as the first day I used it. The Cushman is the only 4 H. P. engine that can handle this work. **Throttle Governor giving extra power** when saw strikes the log. I have a 26-inch saw, with 100-lb. fly-wheel, and when I get this outfit under motion there is something doing. We have sawed logs as high as 20 in. through."

Light Weight
Cushman Engines
For All Farm Work

Are the lightest, yet most reliable and useful engines made for farm work. Easily moved around to do all the stationary work, as well as attached to power driven machines, such as binders, hay balers, sprayers, etc. **Throttle Governed**, Schebler Carburetor, **Quiet and Steady**, Economical of Gasoline, **Perfectly Balanced**, Almost No Friction. 4 to 20 H.P. 40-page Book free.

Cushman Motor Works
804 North 21st St., Lincoln, Nebraska



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Protector

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Samples and prices furnished on application.

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Established 1889. Twenty-fifth Year.

The California Cultivator

Rural Californian combined with the California Cultivator

A Journal of Horticulture and Agriculture

By
THE CULTIVATOR PUBLISHING CO., Inc.
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Thursday, Oct. 1, 1914

OUR ADVERTISERS RELIABLE

We guarantee our subscribers against loss through dishonesty of any advertiser in the Cultivator. We do not attempt, however, to adjust trifling differences between subscribers and honest, responsible advertisers, nor will we pay the debts of honest bankrupts. Notice of complaint must be sent us within 30 days from date of the transaction, and the subscriber must have mentioned the Cultivator when writing the advertiser.

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LEGISLATIVE MATTERS

The counties committee of the California Development Board will hold its twentieth session at Santa Rosa, October 23-25. The principal subject to be discussed is legislative measures now under consideration in California.

ROYAL CALIFORNIA

The Cultivator has just received a communication O. H. M. S. from the publications branch of the department of agriculture at Ottawa. It was addressed to "Royal California," and presumably was intended for the Rural Californian, formerly published by this company and now merged with the Cultivator. The name is suggestive and a most excellent one for our royal state.

OPPORTUNITY FOR LABORERS

With all the coming to California there has been some unscrupulous or mistaken work. One feature of this work is the policy of some large employers in urging people to come where wages are high and work is plentiful. It is true there is plenty of work to be done in California, and there is at times difficulty in securing the hands to do it, but to urge a general immigration of laborers with their families, without sufficient means for support, is at this tme most unfortunate.

THREE MILLIONS

While the United States census for 1910 showed California's population to aggregate 2,377,549, it is to be noted that a census four years past due is of but little value in California. The state is a grower, as shown by its increase of 60.1 per cent during the last decade, while at the same time the increase the country over was only 21 per cent. So we are perfectly safe in saying that the best of the earth is continuing to come to California, and that we have a population within our boundaries today in excess of 3,000,000. After the expositions are over we shall be compelled to add another million to our figures, at least, if not to our population.

Most satisfactory is the fact that the counties in which agriculture is the principal industry show the greatest percentage of increase of population. In this connection we trust we may be pardoned for referring again to the fact that California has one county—Los Angeles—which produced crops valued on the farm at $14,720,900, which made it first in the ranks of all counties of the United States in total production. A Pennsylvania county ranks next with nearly $2,000,000 valuation under the California county.

STATE NEWSPAPER DAY

Judge Hayes of San Diego suggested that the thousand papers published in California should devote Oct. 1 to the observation of newspaper day, giving special effort to make known the commercial and agricultural possibilities of California and incidentally boost for the great expositions which will be held during 1915. A similar day was observed in San Diego nearly a year ago, and proved most helpful in attracting attention to a number of things which even San Diegans did not know regarding their own city. Doubtless the day will result in informing many Californians regarding their own state, and among the thousand papers which will publish material many will find their way into the hands of Easterners who will come to help us feed the world.

The Cultivator takes pleasure in joining in this movement, and we hope some things are said in this number which will increase the pride of Californians in their own state. We certainly are producing wonderfully along some lines; we need to produce far more along others. The soil, the water and the climate are all here; it needs but little capital and much labor and intelligence on the part of many to bring fullest development. Let us all work with a will from this moment to make our state more attractive and even more beautiful, that it may draw the eyes of the world to some of its possibilities during 1915. The two exposition cities will not hold the people all the time.

ORCHARD RETURNS

Careful estimates have been made as to the returns from the orchards of California, and it is claimed that at least $82,000,000 will be secured from this year's crops. The value of all the products of the state, manufactured and mineral, as well as agricultural, is $476,000,000. So if the estimates are fairly correct, one-sixth of the wealth of this state depends upon trees and vines.

THE EXPOSITIONS

The Panama-California opens at San Diego January 1. The Panama-Pacific International Exposition opens in San Francisco February 20, yet the management of each of these great fairs is planning for just as great a crowd, or even greater, as if there were no wars devastating Europe. Sure it is that tourist conditions in Europe will be vastly different next year and for some years to come from conditions in years past, and probably travel to those countries will be greatly reduced. The supposition is that the half million Americans who usually plan to summer in Europe will this year come to California.

In any case those who do attend will have long value for their money expended. The state will have two great expositions. That at San Diego is unique in its method of showing the resources of California, and it will show them to people who will appreciate the information. Of course, the great exposition at San Francisco is on a larger scale. It is truly a world's exposition. By many millions of dollars it is far greater than any preceding event. We have seen the buildings and the grounds, and we must confess that the impression conveyed by the first look down upon the buildings from the heights is almost awe-inspiring.

STATE CONVENTION

The committee in charge of arrangements for the coming forty-fifth state fruit growers' convention at Los Angeles has secured the auditorium in which the sessions will be held and hotel headquarters at one of the best and most attractive hotels of the city. Dr. Cook and Dr. Webber, with other members of the program committee, have not only outlined the program; they have it practically completed, with assurances of addresses from many of the best people in horticultural lines in the world. In fact, so many acceptances have been received that instead of beginning on Wednesday morning the sessions are programmed to begin on Tuesday evening, and while it is still a question as to whether it will be advisable to hold a Saturday evening session, there is so much that will be good that can be slated for that evening that it is possible a Saturday evening session will also be held. The committee at one time resolved not to accept the invitation of the Los Angeles members for an afternoon for auto ride or other diversion, for the program was so filled that it seemed impossible, but many members feel that at least a little time should be taken during the convention for relaxation. At any rate a big time is promised. Another week the Cultivator will outline the program, and it will certainly be attractive enough to draw people from all sections of the state. Contracts have already been made with the railway companies for reduced rates.

Agricultural News Notes

Something is wrong in our marketing system when a small crop brings more money than a bountiful one.

Intelligent diversification of crops is the safest practice unless one be especially well prepared to specialize.

The question of standardization goes to the whole root of farmers' selling problems. You must inspect.

Attention should be given to the minor crops which are to supply feed for the stock and furnish food for the table.

Fruits are a necessity, not a luxury, from the standpoint of ideal conditions of health, and should be on the table in every home.

Farming is a business and the management of the farm must be conducted in a business way. This is true with any occupation and farming is no exception.

The office of markets, which is under the supervision of the United States department of agriculture, has selected Kansas City as a point for research of general marketing conditions.

The National Association of Carlot Live Poultry Shippers and the Southern Poultry and Egg Shippers' Association convention is scheduled to be held in Louisville, Ky., October 20 and 21.

Growers of oranges and grapefruit in the Isle of Pines are urging that crates bear the stencil "Isle of Pines Fruit," also that packing associations make certain that only good fruit be allowed this privilege.

Systems of efficient farm management that will prove adapted to all farms do not exist. There is no universal tonic that will help out all run down farms. The successful system must be developed to meet conditions.

London is a great market for American skunk skins. In 1911 over 2,000,000 skins of this animal were exported to London. We receive a good number of them back after they have been made up abroad and labeled "black marten" or "Alaska sable."

Apple exports to Liverpool, London and Glasgow have been running about 2,000 barrels less per week than last season. There is a fair market for fancy, well colored fruit, but green fruit is almost unsalable. America is the only country now shipping fruit into England.

A person cannot be working for a concern and working against it at the same time, and no employer pays salaries for the latter kind of work. If one is not satisfied with a position, it is much better to go out and find another than to accept pay for half-hearted service.

A farm produce exchange is provided for in a bill introduced by Representative Sumners of Texas. The exchange to be established by the Secretary of Agriculture, who shall collect and distribute details of quantity, quality, location, price, demand, etc., of agricultural products.

President Wilson, it is reported, has joined the "Buy a Bale of Cotton Club" by ordering from the head of the organization in Georgia $50 worth of cotton. People throughout the South are joining the movement to take up the cotton crop left over by the European war. Cotton growers talk of cutting their planting in half next year, substituting wheat and other products.

Agricultural News Notes of the Pacific Coast

Northern California

Mendocino's apple show will be held October 27-31.

Ukiah's hop festival was held from the 15th to the 20th of this month.

Gridley expects to have a rice mill in operation for handling the 1914 crop.

Placerville, Eldorado County, has shipped to date 300 carloads of pears, plums and peaches.

The Concord, Contra Costa County, Poultry Association will hold its show October 20-31.

Dairymen of Orland, Glenn County, have organized a cooperative company for the purpose of establishing a creamery, condensed milk factory and cheese factory.

The Siskiyou County Union high school at Yreka will conduct an information bureau for farmers. C. L. Hampton is in charge of the agricultural department.

The sugar refinery at Crockett, Contra Costa County, it is rumored, will be very greatly enlarged to enable it to care for the total raw sugar product of the Hawaiian Islands.

The Sacramento County Poultry Association will hold its first annual exhibition, November 2-7. The Sacramento Valley Fanciers' Association will hold a show at the same time.

Vineyardists of the Lodi section are rushing their grapes to market as fast as possible because of prospects of early rains. The output from this section is expected to reach 2,000 cars.

The Hayward center of the Alameda County farm bureau met for the first time Monday, September 7. Adviser Nixon made many recommendations to farmers and made appointments to visit several of the ranches.

Seventy-five thousand sheep spent the summer on the government ranges in the Coast mountains. The sheep left the high altitudes in fine condition and are now on the winter ranges of the valley. They suffered much while in the mountains from predatory animals.

At a recent meeting of the board of supervisors an ordinance to promote the horticultural interests of Sonoma County was passed by the board. The ordinance provides for the quarantining of all plants, trees, vines, shrubs, scions, cuttings and grafts imported into the county.

United States Agricultural Expert D. W. Working recently concluded an investigation of the operations of the Yolo County farm bureau. Before leaving, the federal expert said that Advisers Hecke and Searles had their work well in hand, and he highly complimented the organization.

The Northern California Stockmen's Association, an organization of cattlemen of Shasta County, is protesting against the formation of Lassen Peak national volcano park, the spokesman for the cattlemen stating that the park, as defined in the Raker bill, would deprive between 4,000 and 5,000 cattle of Shasta County of summer range, which would be ruinous to several stockmen who graze cattle in the volcanic region. It is claimed a like number of cattle in Tehama County would also be affected.

Central California

Farmers of Tulare County are planning a vigorous campaign against the eight-hour bill.

Four hundred men are at work on a 10-mile stretch of road being built in the Hetch Hetchy Valley.

The cannery at Porterville, Tulare County, is now installing machinery to pack olives the coming season.

The monthly report of the Visalia Cooperative Creamery shows a total of $27,000 paid to dairymen during the month of August.

The Associated Raisin Company has brought suit against a number of raisin growers who failed to deliver raisins according to contract.

Twenty-one apple producing counties of California will be represented at the California Apple Show to be held in San Francisco October 1-11.

Between 40 and 50 tons of almonds will be shipped from the Oakdale district in Stanislaus County this season. Growers are jubilant because of high prices.

At Modesto on October 14-17 inclusive, will be held the California Dairy and Stock Show. Several important legislative questions will be discussed at the meetings.

The Fowler Agricultural Club will give a show and band concert for the purpose of raising funds to defray the expenses of one member for a three days' trip to the university farm at Davis.

Dairymen of Fresno County received for butter fat last month $91,688.32, which is about $15,000 increase over average receipts. The increase is attributed to the fine yield of alfalfa this year.

The Tulare County Citrus Fruit Exchange has elected officers for the coming year, as follows: H. C. Carr, president; J. P. Firth of Strathmore, vice-president, and W. E. Sprott, secretary and manager.

Members of the Holt division of the San Joaquin County farm bureau made a visit of inspection to the Van Loben Sels ranch, near Rio Vista, instead of holding the regular meeting. The ranch comprises 3000 acres.

The output of the Tulare cannery, which is nearing the end of its season, will be about 50 carloads. One-third of this amount has already been shipped and it is expected that the remainder will be shipped within the next 30 days.

Work on an olive pickling factory to cover an entire city block will soon be started at Exeter. It is stated the new plant will be the largest and most complete of its kind in the United States, and it is anticipated that thousands of acres will be planted to olives in the foothill section of the county within the next few years.

In fixing the tax levy for the coming year the supervisors of Stanislaus County included an appropriation of $2,000 to employ a farm adviser. The law requires that before the appointment of an adviser by the university 20 per cent of the farmers in the county must organize the necessary farm bureau, in order to make the work of the adviser more systematic and efficient.

Southern California

Satisfactory experimental plantings of rice have been made in Riverside County.

There is much activity in Riverside County, boosting for the coming county fair.

September 28-30 was set aside for the Ventura County fair and San Miguel Day celebration, held at Ventura.

The Chino sugar factory is turning out 3000 sacks of sugar a day. The sugar percentage generally runs higher than last year.

Eleven thousand two hundred sacks of grain was harvested from 1000 acres by a rancher in Kern County, who received $11,000 for his crop.

J. T. Schroeder of the Chino branch of the American Beet Sugar Company declares there will be no shortage of seed in that section for at least two years.

The sugar factory at Chino, San Bernardino County, is turning out 3000 sacks of sugar of 100 pounds each per day. The crop this year is running one ton per acre higher than last year's.

The Fillmore-Bardsdale-Sespe Farmers' Club of Ventura County held a meeting September 14, in the Union high school at Fillmore. The meeting was addressed by County Farm Adviser W. B. Parker.

At the annual meeting of the Rialto Orange-Lemon Association held at Rialto the following officers were chosen for the ensuing year: George A. Brua, president; M. C. Hodge, vice-president; Edgar R. Downs, secretary and treasurer.

An enthusiastic meeting of those interested in the Imperial County fair, to be held at El Centro November 18-21, was held last week. Mr. John F. Manning of El Centro is secretary of the fair association. An automobile show will be held in connection with the fair.

The breeding of ostriches at Arlington Station, in Riverside County, will be discontinued. One hundred of the birds now on the farm will be shipped to San Francisco for exhibition purposes, 50 to San Diego, and the remainder will go to the ostrich farm at South Pasadena.

Articles of incorporation of the Farmers' Union of Arroyo Grande have been filed with the county clerk of San Luis Obispo County. The object of the association is to endeavor to establish a market for the crops grown by its members. Mr. C. A. Cheadle of Berros has been appointed manager.

The Riverside Portland Cement Company was awarded first prize on potatoes, first prize on onions, special first prize on display orange nursery stock and second prize on general display at the state fair at Sacramento. The produce was all raised on land lying adjacent to the company's plant.

Active preparations are being made for the second annual Riverside County fair, to be held at Riverside October 13-17. Premiums to the amount of $10,000 are being offered. Farm products of every description are to be displayed. Date growers of the Coachella Valley have placed some of their choicest fruit in cold storage for exhibition at the fair.

The Coast

Luna County, New Mexico, is working to secure a county farm adviser.

Total shipments of Yakima Valley fruits for this season are 3,543 carloads.

Twelve carloads of fat steers costing $24,000 arrived in Spokane last week from Idaho.

Managers have already been chosen for Portland's rose festival to be held in June of next year.

From Toronto, Canada, comes the report that 50,000 bushels of American wheat was purchased in one shipment.

The Oregon hop market opened up with a rush when 600 bales of the new crop were bought in the Independence section at 18 cents.

The hop yards of North Yakima, Washington, it is estimated, will pay out $150,000 to pickers for some three or four weeks' work.

Two hundred and fifty thousand dollars is estimated by Yakima Valley orchardists as the loss caused by fire blight in that section.

Though beneficial to root crops and pastures, the recent rains in Oregon have hindered to some extent prune drying and hop picking.

The preliminary schedule has been announced for the six days' conference of northwestern fruit growers during the Spokane Apple Show, November 16-21.

Swine breeders of the northwest met at the Spokane Interstate fair and organized the Swine Breeders' Association. L. H. Lindbarger of North Yakima, Wash., was elected president.

A dairymen's organization has been formed at Union, Oregon. It will be known as the Catherine Creek Dairymen's Association. It is the first organization of its kind in the county.

The Horse Heaven Land Owners' Association, controlling 300,000 acres of unirrigated land in Klickitat County, Washington, is endeavoring to interest the interior department in a reclamation project.

Disbursements to growers of the northwest up to August 31, through the North Pacific Fruit Distributors, aggregated $346,667, according to the figures announced by J. H. Robbins, general manager. Up to the same date a year ago only $32,976 had been disbursed. Business this year exceeded that of 1913 by $313,701.

After ten months of investigation the by-products commission, appointed by the Sixth National Apple Show at Portland last fall, has submitted definite plans. A central organization of fruit and vegetable by-product plants will be formed. Fruit growing sections of Washington, Oregon and Montana are uniting in the plan.

A white fly quarantine order of the Arizona commission of agriculture-horticulture No. 2 prohibits the importation into the state of Arizona of citrus nursery stock from all states bordering on the Gulf of Mexico, Georgia and South Carolina, while a red and yellow citrus scale quarantine prohibits the importation of all citrus nursery stock from the state of California, except from Tulare, Fresno and Imperial Counties.

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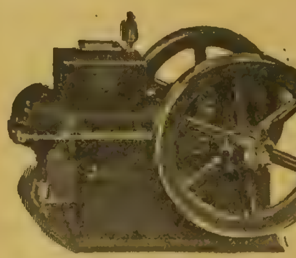

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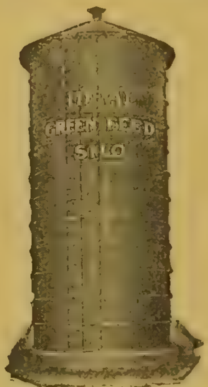

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Live Stock and Dairy

OUR LIVE STOCK INDUSTRY

Contrary to all predictions, the number and value of horses, as well as all other kinds of livestock, are increasing in California. There are now in this state approximately a half million horses at a valuation of about $60,000,000, and the importation of pure-bred stock has been greater during the past year than during any preceding year in the history of the state. Of course it must be admitted that the trotting horse, the coacher and the finer harness breeds have not found it profitable to increase their numbers. Drafters are in the best of form notwithstanding the extending use of the tractor.

In dairy products California is yet backward in the production of cheese. While we produce considerably in excess of 55,500,000 pounds of butter annually, we produce less than 9,000,000 pounds of cheese. The value of the butter produced is $18,000,000, market milk $11,000,000, while the total for all dairy products is approximately $34,000,000. According to the census for 1910, the number of dairy cows kept for milk in this state was 464,329, valued at $18,478,076, or an average of $39.80 each.

Sheep

One branch of the livestock industry that is decreasing year by year is sheep-raising. The output of wool in California has decreased from 56,550,000 pounds in 1876 to less than 12,000,000 pounds in 1913. This is explained by the fact that many of the large ranches have been cut up and made into small fruit orchards, also to the fact that the mutton sheep is increasing in popularity.

Hogs

The census of 1910 showed the total number of swine in this state to be 749,642, valued at about $5,000,000. This is one feature of animal industry which is not coming up to its possibilities. The manager of one of the largest packing houses in the state told the writer recently that his concern was securing only some 5 or 6 per cent of its hogs for slaughter from California farmers. This, of course, is under the average, but the pork products imported to the state aggregate millions in value every month. With the cheapest and best alfalfa grown in the world and conditions favoring the swine husbandry, it is to be hoped that another year will see a wonderful increase in the number of hogs marketed by the California producer.

SWINE AWARDS AT STATE FAIR

The California state fair exhibit of swine this year was conceded by exhibitors and judges the best ever brought together at the fair in competition. The champion boars and sows of all classes showed wonderful breeding and careful exhibit preparation on the part of the exhibitors. Several new breeders entered stock in the swine classes and added much to the general high quality of the show.

Berkshires

Boar, two years and over—1, Standard Master, White; 2, Panama Lee, Barrows; 3, Fashion Longfellow, Humphrey. Eighteen months and under two years—1, Improver B., Oak Grove Dairy Farm; 2, Royal Masterpiece

NEEDS MOTHERING, BUT WILL BE A WINNER
The draft horse industry is growing as never before.

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KRESO DIP No. 1 has been used at the large state fairs in the United States for the last ten years to prevent the spread of contagious disease. It has done it, and KRESO DIP No. 1 will do the same for you on the farm.

KRESO DIP No. 1 is Easy to Use—Reliable—For Sale by All Druggists—Effective—Not Expensive.

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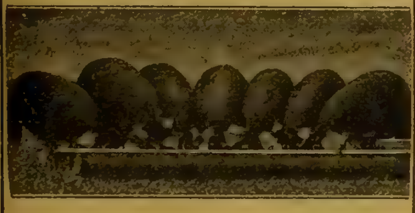

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13th, Boethe. One year and under 18 months—1, Grander Leader 2nd, Humphrey. Six months and under one year—1, Ruby's Kennett Lee, White; 2, Baron D., Humphrey; 3, Legal S., Murphy; 4, Fashion Longfellow 3rd, Humphrey; 5, Prince of Tehama, Barrows. Under six months—1, One Entry, Humphrey; 2, Model's Emperor, Gish; 3, One Entry, Humphrey; 4, University Farm Star 1st, Univ. of Cal.; 5, One Entry, Murphy. Sow, two years and over—1, Robin's Ruby, White; 2, Premier's Fashion 2nd, Humphrey; 3, Columbia's Model 28th, White; 4, Columbia's Model 40th, Murphy; 5, Nora's Beauty 3rd, Gish. Sow, 18 months and under two years—1, Master's Lady Mayhews 2nd, Humphrey; 2, Master's Lady Mayhews, Humphrey; 3, Superior Rival's Princess, Humphrey; 4, Masterpiece Berryton Duchess, Day; 5, Columbia's Model 63rd, White. Sow, one year old and under 18 months—1, Grape Wild Rivaless, Humphrey; 2, Star's Princess 20th, Humphrey; 3, Symboleer's Belle, White; 4, Crestview Lady D., Murphy; 5, One Entry, Murphy. Sow, six months and under one year—1, May Queen of University Farm, Univ. of Cal.; 2, Ruby Lee 6th, White; 3, Mayhew's Silver Lady, Humphrey; 4, Miss Los Molinos 2nd, Barrows; 5, Successor's Bernice 6th, Goodall. Sow, under six months—1, One Entry, Humphrey; 2, California Laurel 2nd, Univ. of Cal.; 3, California Laurel 4th, Univ. of California; 4, Inyo Empress, Gish. Herd, boar and three sows, over one year—1, One Entry, Humphrey; 2, Standard Master, White; 3, One Entry, Humphrey. Herd, boar and three sows, under one year—1, One Entry, Humphrey; 2, Ruby's Kenneth Lee, White; 3, One Entry, Humphrey. Herd, boar and three sows, over one year, bred by exhibitor—1, One Entry, Humphrey. Herd, boar and three sows, under one year, bred by exhibitor—1, One Entry, Humphrey; 2, White; 3, Humphrey. Four swine, get of same boar, bred by exhibitor—1, get of Fashion Longfellow, Humphrey; 2, get of Kennett Lee, Jr., White. Four pigs, any age, produce of same sow, bred by exhibitor—1, produce of sow, Humphrey; 2, produce of sow, Barrows. Fat barrow, any age—1, One Entry, Humphrey; 2, One Entry, Murphy. Pen of three fat barrows, any age—1, One Entry, Humphrey. American Berkshire Association Trophy—1, Ruby's Kenneth Lee, Kenneth Lee Duchess, Ruby Lee and Ruby Lee 2nd, white.

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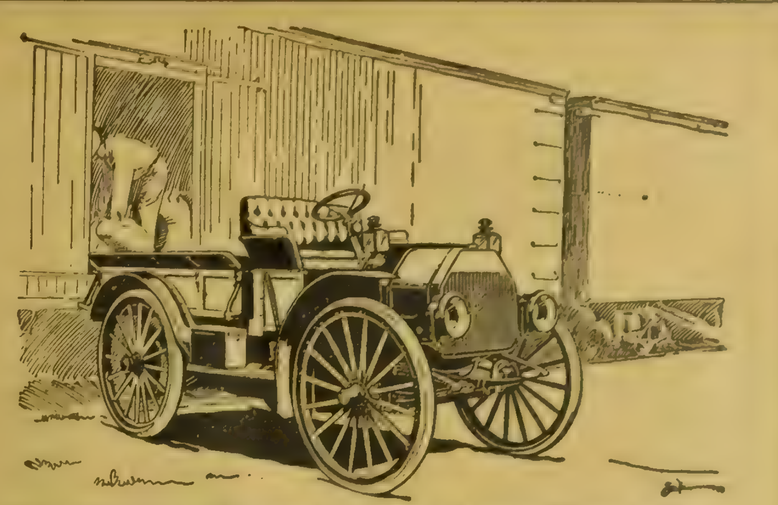
Boars, two years or over—1, Dagg's Fancy Col., Daggs; 2, Slocum's Crimson Wonder, Fraser; 3, R. D.'s Beauty, Johnson; 4, California Volunteer, Thorp. Eighteen months and under two years—1, Draughtnot, Rucker & Coppin; 2, King Scott Again, Johnson. One year and under 18 months—1, Robert Leroy, Daggs. Six months and under one year—1, King Colonel, Univ. of Cal.; 2, Crimson Jumbo, Fraser; 3, Crimson Wonder 2nd, Fraser; 4, Fancy's Pilot, John. Under six months—1, University Colonel 2nd, Univ. of Cal.; 2, Ceres B., Lamb; 3, Omar of Mossdale, Thorp; 4, Jack Monarch, Daggs; 5, Edward, Mowrer. Sow, two years and over—1, Queen Vic, Rucker & Coppin; 2, Model Lady, Thorp; 3, Glady 11th, Fraser; 4, Wayne's Beauty, Johnson; 5, Fancy, Johnson. Sow, 18 months and under two years—1, Cherry Maid, Fraser; 2, Cherry Maid Lass, Fraser; 3, Stockton Lass, Thorp. One year and under 18 months—1, Alice Slippers, Daggs; 3, Bessie Elder, Daggs; 4, Fancy Nell of Mossdale, Thorp; 5, Mamie Flake, Daggs. Six months and under one year—1, Lamb's American Beauty, Lamb; 2,



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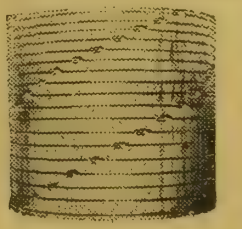

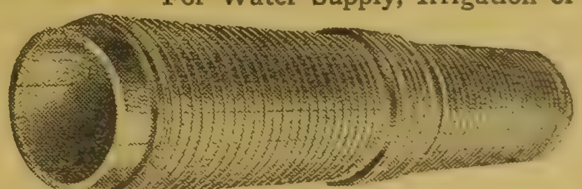

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Send for a copy of our booklet "Profitable Feeding," giving valuable information, also instructions for the use of Dried Beet Pulp. Your name and address on a postal will bring you a copy free.

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Girlie 2nd of Mossdale, Thorp; 3, Brighton 13th, Rucker & Coppin; 4, Wonder's Lad, Fraser; 5, Queen of University of California, Univ. of Cal. Under six months—1, Johnson; 2, Eleanor, Fraser; 3, Bennie Helen, Daggs; 4, Johnson; 5, Minnie Hanley, Daggs. Boar and three sows over one year—1, Rucker & Coppin; 2, Daggs; 3, Fraser. Under one year—1, Univ. of Cal.; 2, Daggs; 3, Fraser. Over one year, bred by exhibitor—1, Daggs. Under one year, bred by exhibitor—1, Univ. of Cal.; 2, Daggs; 3, Fraser. Four pigs, any age, produce of same sow—1, produce of Princess of University Farm, Univ. of Cal.; 2, four animals, Johnson; 3, Daggs. Barrow, any age—1, Bob, Fraser; 2, Johnson. Pen of three barrows, any age—1, Daggs; 2, Johnson. Special Offer National Duroc Jersey Association, barrow, under one year—1, Bobolink, Fraser; 2, Johnson; 3, Mower. Pen of three barrows under one year—1, Bob, Bobby, Bobolink, Fraser; 2, Johnson; 3, Mower. Boar and three sows, owned by exhibitor—1, Daggs; 2 and 3, Fancy's Pilot, Fancy's Rose 2nd, Fancy's Rose 3rd, Fancy's Rose 4th, Johnson.

Poland Chinas

Boar, two years and over—1, King's Wonder, Bernstein; 2, Hustler, Bassett; 3, Young's Wonder, Young; 4, Great Prospect, Browning. Eighteen months and under two years—1, One Entry, Browning. One year and under 18 months—1, All-Is-Well, Bernstein; 2, Dudu, Henry; 3, Chief Picture 2nd, Bassett. Six months and under one year—1, Hustler's Prospect, Bassett; 2, Monarch, Bassett; 3, Young on the Dot, Young; 4, George's, Bernstein; 5, Hanford Boy, Bassett. Under six months—1, Mark's Choice, Bassett; 2, One Entry, Beckman; 3, Captivator, Bassett; 4, Hustler's Banker, Bassett; 5, Perfection of University Farm 1st, Univ. of Cal. Sow, two years or over—1, Bessie Ross, Bernstein; 2, Black Bertha, Bernstein; 3, Victoress, Bassett; 4, Queen of Kings, Bernstein; 5, Miss F. Corrector, Bassett. Eighteen months and under two years—1, Candy Kid, Bernstein; 2, Taffy Girl, Bernstein; 3, Golden Prospect, Bassett; 4, Chocolate Drop, Bernstein; 5, Wonderful Queen, Bassett. Six months and under one year—1, Lady Louis 2nd, Young; 2, Matchless Susan 5th, Univ. of Cal.; 3, One Entry, Browning; 4, Lady Knight, Bassett; 5, Lady B. Corrector, Bassett. Under six months—1, Beautiful, Bassett; 2, Her Majesty, Bassett; 3, Beckman. Herd, boar and three sows, over one year—1, Bernstein; 2, Bernstein; 3, Bassett. Boar and three sows, under one year—1, Bassett; 2, Bassett; 3, Young. Boar and three sows, under one year, bred by exhibitor—1, Bassett; 2, Bassett; 3, Bernstein. Four swine, get of same boar, bred by exhibitor—1, Bassett; 2, Browning. Four pigs, any age, produce of same sow, bred by exhibitor—1, Bassett; 2, Beckman. Boar, any age—1, King's Wonder, Bernstein. Boar, any age, bred by exhibitor—1, King's Wonder, Bernstein. Sow, any age—1, Candy Kid, Bernstein. Sow, bred by exhibitor, any age—1, Banker's Lady, Bernstein.

Yorkshires

Boar, under six months—1, Captain of University Farm 3rd, Univ. of Cal. Sow, under six months—1, Unilola of University Farm, Univ. of Cal.; 2, Unilola of University Farm 2nd, Univ. of Cal.; 3, Unilola of University Farm 3rd, Univ. of Cal. Boar and three sows, under one year—1, Univ. of Cal.

Chester Whites

Boar, two years and over—1, Iowa Boy, Cunningham. Eighteen months and under two years—1, El Capitan, Cunningham. Six months and under one year—1, California Dandy 2nd, Univ. of Cal. Under six months—1, Cunningham; 2, Cunningham; 3, Cunningham; 4, Cunningham. Sow, two years old or over—1, Star Vino, Cunningham; 2, Mill's Best, Cunningham; 3, Crescent - Callie, Cunningham. Eighteen months and under two years—1, Miss Trim, Cunningham. Six months and under one year—1, Silver Maid of University Farm 2nd, Univ. of Cal.; 2, Silver Maid of University Farm 1st, Univ. of Cal.; 3, Silver Maid of University Farm 3rd, Univ. of Cal.; 4, Silver Maid of University Farm 4th, Univ. of Cal.; 5, Gussie, Cunningham. Under six months—1, Cunningham; 2, Cunningham; 3, Cunningham. Boar and three sows, over one year—1, Cunningham. Under one year—1, Univ. of Cal.; 2, Cunningham. Four swine, get of same boar, bred by exhibitor—1, Cunningham; 2, Cunningham. Four pigs, produce of same sow, bred by exhibitor—1, Cunningham; 2, Cunningham. Barrow, any age—1, Univ. of Cal.

Hampshires

Exhibitors: Eaton & Hughes, Santa Rosa, Cal.; Dr. J. W. Henderson, Berkeley, Cal.

Grand Champion Sow, Sander's Bonita, Eaton & Hughes. Sow, six months and under one year—1, Sander's Bonita, Eaton & Hughes; 2, Sander's Queen, Eaton & Hughes.

Veterinary

Answers in this column by Dr. Wm. Petrie, 2714 South Harvard Blvd., Los Angeles, are without charge. For immediate mail answer remit $1.00. In writing questions give full symptoms or particulars of injury of animal

Raising Colt on Cow's Milk

Can I raise a colt on cow's milk and would it be best to dilute the milk, or how is best to raise a colt by hand?—Subscriber, Bachelor.

You can raise a colt all right on cow's milk. It does not need to be diluted, but might be allowed to stand 12 hours and the cream removed. The colt should be fed several times a day, as the stomach is small. Put some hay and grain where it can reach it, and it will soon learn to eat. When it is five months old gradually reduce the milk and soon stop altogether.

Mule's Foot Hurt

Have a mule colt about six weeks old that was stepped on by a horse and had its hind hoof about two-thirds torn off. It has been that way about two weeks and has proud flesh in it. Will a new hoof grow in the place of the old one, or will the old one grow back, or what is best to do about it?—Subscriber, Bachelor.

Too bad that the foot was not

(Continued on Page 335)

Purebred Registered
HOLSTEIN
CATTLE

Our Advanced Registry of milk and butterfat records show that we have 22 cows each with productions of above 875 pounds butterfat or 1093 pounds of butter for the year. All other breeds together cannot show that number of cows with records of equal production. Of all that is being done for the advancement of the dairy industry, nothing exceeds in value the work of the testing associations. The records made do much to prove the supremacy of the Holstein cow as a milk and butter producer. For facts

Send for FREE Illustrated Descriptive Booklets
HOLSTEIN-FRIESIAN ASSO., F. L. Houghton, Sec'y
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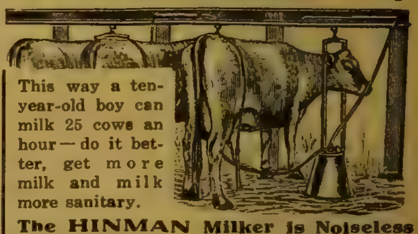
The HINMAN Milker Way



This way a ten-year-old boy can milk 25 cows an hour—do it better, get more milk and milk more sanitary.

The HINMAN Milker is Noiseless light, easily cleaned, no vacuum in pail, no piping—just a simple drive rod; only two moving parts. Pays 150 per cent on investment. Milks 105,000 cows morning and night.
Write for free booklet before you turn page
HINMAN MILKING MACHINE CO.
735-45 Elizabeth St., Oneida, N. Y.

THE GUERNSEY COW HAS POINTS OF MERIT

BUY
Guernseys
FOR PROFIT

Your investment in GUERNSEYS will return a larger profit than that from any other dairy breed. Write for literature.

GUERNSEY CATTLE CLUB
BOX C. C. PETERBORO, N. H.

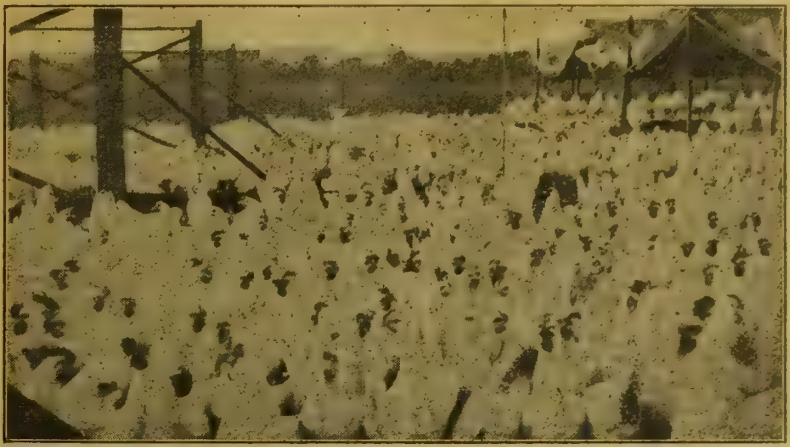
For Sale:- REGISTERED JERSEY CATTLLE. Both Island and American Types. J. D. Huston. Farm address, Imperial, Cal. Home address 1725 W. Adams Los Angeles

Profit in the Poultry Yard

OUR POULTRY INDUSTRY

With one poultry plant in the state with a capacity of 100,000 chicks monthly, and this only one of dozens of large concerns, it may be seen that California is producing some poultry. The Cultivator recently published a large illustration taken on a ranch with 20,000 head. Now comes report from Inyo County that 400 acres are to be devoted to one poultry ranch that will accommodate at least 12,000 laying hens. This will mean several thousand additional head on the ranch constantly, so that Inyo County may claim precedence over the far northern section in magnitude of single ventures in the poultry industry. Petaluma claims, and rightly, the honor of being the center of the poultry industry of the Pacific Coast. While there are immense ranches there devoted to the poultry industry, the average is five acres, and each five acres accommodates anywhere from 500 to 3,000 chickens. There are others in the same section which will accommodate 30,000 chickens. From that one section there are shipped annually between 10,000,000 and 11,000,000 dozen eggs and close up to 100,000 dozen poultry.

The entire state produced nearly 45,000,000 dozen eggs and 300,000 dozen poultry. The industry has been somewhat discouraged during the past two years because of high prices of feed and because of the large receipts of poultry products from the Middle West and from China. At the present time the importations of Chinese eggs has been stopped because of the war conditions.



A RIVERSIDE COUNTY POULTRY RANCH
The state imports millions of dollars in poultry products. It should produce them. The hen census shows nearly 7,000,000 population.

POULTRY FANCIERS TO EXHIBIT

The San Francisco Poultry, Pigeon and Pet Stock Association will hold another show at the Auditorium, San Francisco, December 8 to 13. The show this year, on account of the increased floor space, will be on a larger scale than ever before. Many new features of interest to poultry raisers will be introduced. Utility and fancy stock from all over the country are to be shown. The exhibit of pigeons, rabbits and children's pet stock will also be large. The judging of these various entries will be in the hands of eight experienced men. C. S. Beyers, the Orpington judge of Indiana, will handle the fowls of that breed.

Cash prizes, cups, medals and useful trophies will be awarded. Much attention is to be paid to dressed poultry this year. Every phase of this business will be displayed. A free sales secretary has been appointed to assist buyers and sellers of stock. No charge for this service will be made. E. J. Talbot, Mutual Savings Bank Building, San Francisco, is the secretary of the show.

LANGSHAN FANCIERS

The Pacific Coast Langshan Club has decided to give certificates of award for first cock, first cockerel, first hen and first pullet at all of the 1914 poultry shows where three or more members of the club are competing. At the show of the Alameda County Poultry Association to be held in Oakland a cut glass sugar and creamer, spoon tray and nappy will be awarded for first pullet, and a silver cup for first cockerel.

PURE BREDS ON NEARLY ALL RANCHES

The Pacific Coast Langshan Club is entering upon its third year of show work. Breeders of Langshans are cordially invited to join. The dues are $1 per year. Write to the secretary-treasurer, M. W. Nicholson, 2204 Vicksburg Avenue, Oakland.

A coat of whitewash on the inside of hen house may not keep mites and lice out, nor disease. But the man who keeps his hen house whitewashed, is also sure to keep the roosts clean and free from mites. By all means, whitewash the hen house on general principles and do it thoroughly.

4%
and Absolute Safety for your Savings!

The SECURITY TRUST & SAVINGS BANK of Los Angeles is the oldest and largest savings bank in Southern California, with deposits totalling over Forty Million Dollars. More than 88,000 individuals claim it as their banking home, and of this number many transact all their banking business by mail. You can bank by mail with this big bank with every assurance of the same safety and satisfaction these 88,000 depositors now enjoy. Deposits can be mailed in the form of checks, drafts, money orders or currency in registered mail. Four per cent interest is paid on Term Savings Accounts. Write for full information regarding banking by mail.

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Oldest and Largest Savings Bank in the Southwest.
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BEWARE OF IMITATIONS
Insist on Having
French's Poultry Mustard
Sold in Sealed Packages Only

French's Poultry Mustard is a scientifically manufactured article containing the flours of different mustard seeds so blended to produce the greatest strength in the volatile principle that is desired, and is required to produce the fortunate results arrived at by the users.

Germain Seed & Plant Co.
326 So. Main Street, Los Angeles

A teaspoonful to six to twelve fowls fed daily in dry or wet mash. Booklet for the asking.

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CORRECT WALNUT FERTILIZER
is Phosphoric Acid and Humus. You know the proper way to get Humus, and you should know that the only natural and economical source of Phosphoric Acid is high grade, finely ground
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ASK US ALL ABOUT IT
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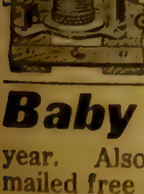

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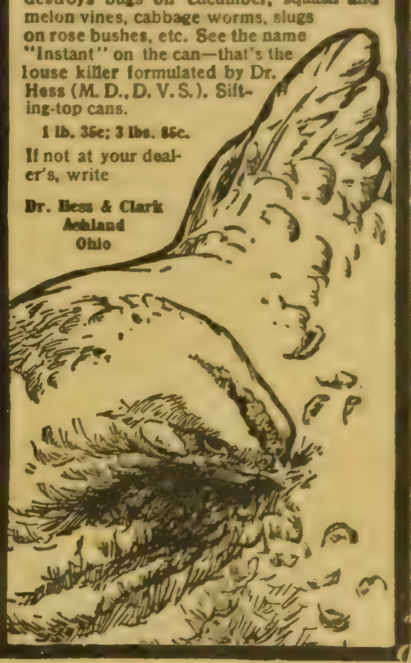
Pull the stumps from your fields and replace them with big crops. Don't pay taxes on idle land.
The Hercules All Steel Triple Power Stump Puller
pulls an acre of stumps a day. Pulls biggest stump in 5 minutes. Guaranteed against breakage for 3 years. 30 days free trial. Send name for book, free—and special low-price offer. Address
Hercules Mfg. Company, 1928-23rd St. Centerville, Iowa, U. S. A.

Baby Chicks: Standard Bred; The best to be had are shipped by us every week in the year. Also Petaluma's best utility stock. Price-list and pamphlet mailed free upon request.
Now booking orders for Fall and Spring delivery.
Thomas Hatchery, Petaluma, Cal., Route D.

DR. HESS Instant Louse Killer
Kills Lice on Poultry and Farm Stock

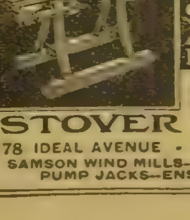
It kills them *instantly*—as soon as it gets to them—that's why it's called *Instant*. It also destroys bugs on cucumber, squash and melon vines, cabbage worms, slugs on rose bushes, etc. See the name "Instant" on the can—that's the louse killer formulated by Dr. Hess (M. D., D. V. S.). Sifting-top cans.
1 lb. 35c; 3 lbs. 85c.
If not at your dealer's, write
Dr. Hess & Clark
Ashland
Ohio



The Fresh Air Brooder Stove
It exhausts warm **Fresh Air** from its **Base** to the chicks. If you use our stove you can't get away from proper **ventilation**. **Our 1915 Brooder Stove** is by far the best model we have ever produced. Let us send you our **New Catalogue**. It is full of splendid information and value to you with any **system**.
J. E. Kresky
Petaluma, California

The Summer Season
Don't expect to cram for eggs in the fall without preparation during the summer.
COULSON'S EGG FOOD
used during the summer will reward you with a good egg yield in the fall. Secure it from any reliable poultry supply house.
Coulson Co
PETALUMA, CAL.

A VALUABLE BOOK FREE



It tells of experiments in feeding live stock both ground and unground grain, alfalfa and kaffir corn—also shows how 25% can be saved—shows values of different foods—tells about balanced rations—describes
STOVER AND IDEAL FEED MILLS
To get it simply write—*Send me your book LIVE STOCK AND GROUND FEED.*
STOVER MFG. CO.
178 IDEAL AVENUE - - - FREEPORT, ILL.
SAMSON WIND MILLS—ALFALFA GRINDERS
PUMP JACKS—ENSILAGE CUTTERS

2712 Hours Continuous Pumping with A POMONA DEEPWELL PUMP

—lifting 1,025,136 gals. of water, with no trouble and not one cent for repairs."

That's what one Pomona Deep Well Pump user says.

READ WHAT OTHERS SAY:

"I must think pretty well of a "Pomona," for I have just installed the third."

"I was educated as a mechanic and never saw a smoother running or more satisfactory piece of machinery than a Pomona Deep Well Pump."

"15 per cent better efficiency than you claimed."

"My No. 28 Pomona Pump lifts 41 inches of water 220 ft., using 28.8 H.P. at the meter, which is better efficiency than you estimated."

"I have little or no repairs with a Pomona."

Catalog Free—Write for it

Gives full information about our pumps—also valuable irrigation data. Ask for Pump Catalog No. 54C.

To get the best results use **POMONA PUMP OIL.**

Pomona Mfg. Co., Pomona, Cal.

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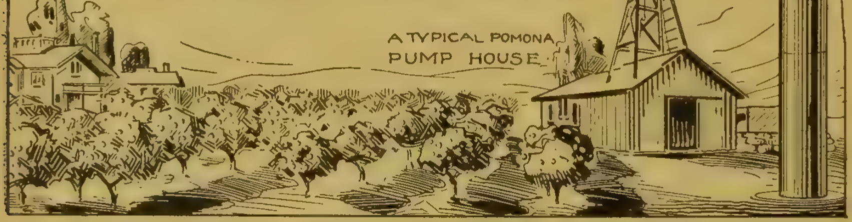
930 Investment Bldg., 8th & Broadway


A TYPICAL POMONA PUMP HOUSE

Every Rancher should own a Western Gas Engine

Announcing the New Model 15

The Model 15 is without exception the most perfectly designed gas engine that has ever been constructed. It is the ultimate realization of our efficient engineering department, whose united effort has been to construct an engine absolutely perfect in every detail. Nothing has been sacrificed from an engineering standpoint. It is a truly remarkable engine—offering no chance for critics. The Bosch high tension magneto and new force feed automatic oiling device are among the more important improvements. Call and see demonstration.

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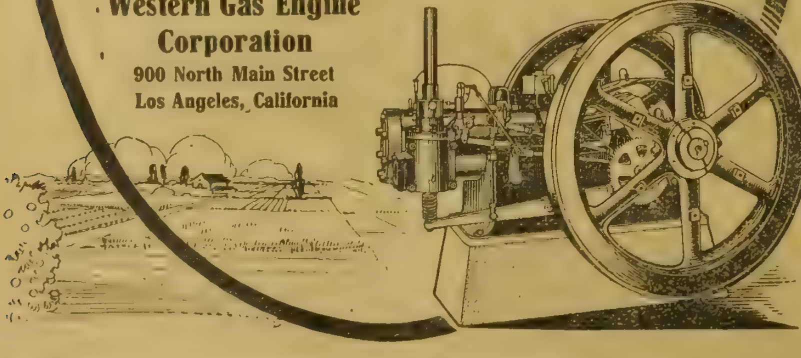

Irrigation and Forestry

IRRIGATION IN CALIFORNIA

The number of farms in California is over 88,000, and nearly half that number, or 39,352, are under irrigation, an increase of 53.3 per cent during the decade of 1900-1910. The largest percentage of land under irrigation in any one county is in Imperial, where 94.6 per cent of all farms are irrigated. Inyo is the next largest with 93.2 per cent. The total ditch length in the state is 21,129 miles, almost once around the earth. With over 1500 reservoirs with a capacity of 743,780 acre-feet, the pumping capacity of the state is 5,275,298 gallons per minute. The average cost of irrigation enterprise in the state is $15.37 per acre and the average operation and maintenance cost is $1.54 per acre.

INTERNATIONAL IRRIGATION CONGRESS

To bring every possible acre of idle and apparently useless land under the plow is the aim and object of the International Irrigation Congress which this year will hold its convention in Calgary, October 5 to 9. During the past few years there have been millions of acres of land brought under cultivation by the scientific application of water, and the problems that confront the irrigationist are rapidly being solved by the information disseminated at the annual conventions for the discussion of matters that affect the settlers. These questions are vital to the prosperity of the country.

Governments of the United States and Canada, as well as a number of foreign countries where irrigation is well developed, are giving of their best and most experienced men to this convention in Canada this year, thus backing up and aiding the noble work which this organization has voluntarily undertaken. These men will give of their valuable experience to those who are actually and daily experimenting with the problems of irrigation in the reclamation of idle lands, and thus assist to accomplish the aims and objects of the organization as expressed in the motto "Make easy the path of the home-builder."

Irrigation is one of the chief works of an advanced civilization. The population of the world is advancing more rapidly than the production of food stuffs, and the work of the Irrigation Congress is a distinct effort to perform its share in the development of this civilization.

APIARIES INCREASED IN VALUE IN 10 YEARS MORE THAN 100 PER CENT

There is now over a million dollars invested in bees in this state by 6869 beekeepers, who own 200,718 colonies.

Questions and Answers

THE EDITOR AND STAFF

Questions to be answered in this department should be received at this office one week before reply is expected. Write plainly on one side of the paper and sign full name and address. Unsigned communications receive no attention.

Salt for Fowls

Kindly tell me why salt is seldom recommended in chickens' food and never in turkeys'? Why would it not be good for both?—J. M. P., Pacoima Hills.

A little salt is very good for fowls, but too much is injurious. Many dry mash formulas do contain a small amount of salt, but the objection to using it in dry mash is that it cannot be evenly distributed and some fowl is liable to get too much. When salt is to be fed it is much safer to put it in a wet mash where it can be dissolved and thoroughly distributed. The proper way to use it is to dissolve about a tablespoon in a gallon of water, and after it is dissolved mix in the ground grain and other ingredients. Salt is poisonous to ducks, and turkeys certainly do not need it, for they never get it in their natural wild state. I always salt a wet mash for chickens about as I would salt mush for my own family, but I have never thought they needed it. It simply makes it a little more palatable.—J. A. K.

Feeding Pigeons

Will you also tell me what green stuff pigeons will eat that is good for them? Is a mash good for pigeons? —J. M. P., Pacoima Hills.

This question was submitted to the manager of one of the largest pigeon lofts in the west, and he replied: "We feed wheat, milo maize, hemp and one or two other small hard grains, never any ground grain or mash. It is not good for them. In place of green feed we give once a week dry Canadian peas. After these enter the crop they are softened and answer the purpose for which green feed is used.—J. A. K.

Slugs

There are some little soft bugs on my pear trees. They are green and shaped like a nipple, from one-fourth to one-half an inch long. They eat the green off the leaves, leaving only the fibre.—Subscriber, Anaheim.

The description is somewhat indefinite, but we would guess that this is an infestation of slugs. If the soft-bodied bug is slimy and sluggish in movement it is probably the ordinary slug, which can be easily controlled by scattering dried air-slaked lime, ashes, or even road dust, over the trees. If it is not the slug, but is a leaf-eating insect, then spray with Paris green or some other arsenical.

The New

Steel King Motor Plows

are creating a SENSATION among the California Farmers

Because:

They are actually doing just what they are represented as being able to do, and standing up to the job

- At Sawtelle one is Running a Thresher This Week
- Near Tulare one is about to Mow a Large Field of Alfalfa
- Near Porterville one is about to Start a Big Plowing Job
- Near Los Angeles one is Operating Upon a Track as a Locomotive Hauling Long Grape Trains

All at a fuel cost of 4 cents per hour

We cannot too strongly urge the progressive farmers to investigate this new development

8 Horses, $1050

Tell us you want to know how to increase your farming profits and at the same time make the work easier

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Pacific Coast Distributor
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Dutch Bulbs

Our Holland Bulbs are arriving on time. Most of them, including

HYACINTHS, TULIPS, Etc.

are already here, and the size and quality is even better than usual.

Ask for our New Bulb Catalog

containing cultural directions especially compiled for this climate. Free.

SEEDS

of all kinds for Fall Planting. Our general catalog and "Hints on Gardening" will be mailed post paid on request.

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MEN WANTED

We positively teach you at home by mail to earn $25 to $50 weekly as Chauffeur or Repairman. Students assisted to positions. Best system, lowest price. MODELS FURNISHED. Write for Free Book.

Practical Auto School, 68P Beaver Street, New York

LIKE MOTHER

Mother—Helen, little girls must not talk all the time at the table.

Helen—When will I be old enough to, mother?

Money Making Little Liners

Inserted in These Columns Under a Classified Heading. A Clearing House for Our Many Thousands of Readers

LINER RATES ARE 12c PER LINE PER ISSUE

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MISCELLANEOUS

Free for Six Months—My special offer to introduce my magazine "INVESTING FOR PROFIT." It is worth $10 a copy to anyone who has been getting poorer while the rich, richer. It demonstrates the REAL earning power of money, and shows how anyone, no matter how poor, CAN acquire riches. INVESTING FOR PROFIT is the only progressive financial journal published. It shows how $100 grows to $2200. Write NOW and I'll send it six months free. H. L. Barber, 430, 28 W. Jackson Blvd., Chicago.

For Exchange—Holt steam tractor, original cost $3000; steel road roller, large insilage chopper. Trade for auto equal value. Demmitt Company, 120 North Main street, Los Angeles, Cal.

For Rent—80 acres level land ½ mile from Delta, Utah. Small house, 4 wire fence. Free gravity water. Long lease to experienced farmer. Would exchange for California, Orange Co. preferred. H. E. Hunt, Anaheim, Cal.

For Rent—1 to 4 acres for dairy and chicken ranch with house, also have for sale 5½ ton Victor scale and alfalfa renovator, close to city. A. Lenzinger, Hyde Park, Cal. Phone 2642.

"Smith's Pay the Freight"—To reduce the high cost of living, send for our Wholesale to Consumer Catalogue. Smith's Cash Store, 112 Clay St., San Francisco.

State, Indian and government land. Write for booklet. The California State Land Information Bureau, Sacramento.

LIVE STOCK

Ohio Improved Chester White—(O. I. C.); entire herd immunized against hog cholera. Nothing but immunized stock sent out. Few spring boars left. Few June gilts. One August litter will be ready to ship the middle of October. October farrows will be ready December first. Make reservations now for first choice. All stock first class in every respect. C. B. Cunningham, Mills, Sacramento County, California.

Grape Wild Farm Thoroughbreds—Guernsey Bulls of A. R. Breeding. BERKSHIRE HOGS. Finest herd in the state. All ages for sale. A. B. Humphrey, proprietor. Mayhews, Sacramento Co., California.

Thoroughbred Chester Whites, $15.00 at weaning time, also two March and three June farrowed boars. Dallas Bache, R. D. No. 2, Hollister, San Benito County, Cal.

For Sale—Young registered Berkshire boars and sows; fine strong stock; boars ready for service. Stanislaus Ranch Co., Crows Landing, Calif.

Thoroughbred Berkshire Boars of all ages from developed and large-boned hogs. Riccomi Bros., Mountain View, Cal.

Thoroughbred Doroc Jerseys for sale. Address Box 543 Lomita Rancho, San Jacinto, Cal.

Glenview Poland China—Stock for sale. Chas. R. Hanna, R. F. D. No. 3, Riverside, Cal.

M. H. Locke Co., Lockeford, Cal.—Choice young Jersey bulls for sale.

TREES

For Sale—One and two-year-old Washington Navels and Valencia Orange Trees. Eureka Lemons and Marsh seedless grapefruit, for Spring 1914 delivery. Write for prices, or call and examine stock at Morris Citrus Nurseries, Cor. Juanita and Valley Center, R. F. D., Box 34, San Dimas, Cal.

For Sale—50,000 Sour Orange seed bed stock, fine quality, or will let to responsible party on percentage basis; also 2000 A1 late Valencias, two years old next spring, or might exchange for Washington navels. H. H. Eshelman, Soldiers' Home, Cal.

Olives are our specialty. We propagate only the two best varieties. Broad Leafed Mission, and an early heavy bearing strain of Manzanillos. If you want fine thrifty trees, quality and price will do business for us. Exeter Nurseries, Exeter, Cal.

The Walnut Nursery has a fine lot of grafted walnut trees again this season, Chase, Eureka, Mayette and Placentia Perfection. Order now and get the best. W. A. Litten, Prop., R. F. D. No. 2, Whittier, Cal. Home phone 7863.

Walnut Trees—Eureka and El Monte varieties a specialty, also Franquette and Placentia. Write for prices and description of stock. Personal inspection invited. Eureka Walnut Nursery, Montebello, Cal.

The 1200-Acre Nursery, growers of 1500 varieties of trees and plants. OREGON NURSERY CO., Orenco, Oregon. Sales office, 522 Chamber Commerce, Los Angeles, Cal.

For Sale—Avocado seed, also Avocado seedling trees, large enough for budding this fall. Prices based on quantity desired. Address H. A. Phelps, Sherman, Cal.

Snap—1200 budded lemon trees, ¾ in. diameter and up, $500 for quick sale. Address A. C. Wisegarver, San Fernando, Cal.

1000 Avocado Seedlings—Pots, also can furnish nice plants, bare root, at low price. A. A. Quint, R. D. No. 2, Pasadena, Cal.

For Sale—Eureka Walnut Trees, budded on Native Black Walnuts. Choice stock. Order immediately. Don't delay. Wm. Holve, Fullerton, Cal.

Citrus Nurseries, Murphy Oil Company, East Whittier, California. Selected stock for sale; inspection invited.

You Future Nurserymen—Write for prices on special stocks of plants to start business with. Ballou's Nursery, Pasadena, Cal.

Budded Citrus Trees and seedlings at fair prices. Will take auto or land. Butler's Morning Side Nursery, P. O. Box 145, Lamanda Park, Cal.

MACHINERY

For Sale—Save you half. Material Guaranteed. Used Windmills, Tanks
Pumps, Engines
Ranch Machinery
6 Gang Tractor Plow, Disc Plows, Harrows, Cultivators
Drills, Seeders, Graders
Power Feed Chopper, Bone Grinder, Fan Mill Saw
Manufacture Galvanized Tanks
Save 30 Per Cent and Freight
1000 Gallons, $19.50; 2000, $29.50
100 Shovels, 15 cents; Picks, Mattocks, Post Hole Diggers, 50 Cents; Hay Rake Teeth, 100 Sickles Tons
Pipe Fittings, 1 in. to 8 in.
Gates, 1 in. to 8 in.
Vertical Pumps 2½ in. to 8 in., 40 Per Cent

Double Acting Ames Head, nearly new, $135.00. Cylinder Rods, all sizes, sundries too numerous to mention. Our prices absolutely cheapest good serviceable material can be produced for. Pioneers in our line. Call, write. Office DEMMITT COMPANY, 120 North Main, Los Angeles, 15191. Broadway 1984.

Gas engines, centrifugal and deep well pumps, motors, and everything pertaining to irrigation, for sale and exchange. If you want a complete plant or any part write us; we are experts in irrigation; advice and estimates cheerfully given. Will buy, sell or exchange. Reliable and responsible, everything guaranteed as represented. Machinery & Motor Exchange, Inc., 733-735 San Fernando St., Los Angeles. Main 6382, F-3433.

For Sale—Used and new gas engine, 2 H.P. up, rebuilt and fitted with modern equipment. 22 years' experience enables us to repair and rebuild gas engines correctly. Get our prices. Lloyd, 806 N. Main, Los Angeles.

POULTRY

For Sale—Poultry ranch of two acres. Fully equipped, including one acre of alfalfa, pumping plant, 1000 head of thoroughbred stock (Wyckoff strain S. C. White Leghorns), large incubator cellar, 3000 hatching capacity, 2 large brooder houses, Calif. house, garage, horse, wagons, tools, etc. Established market for all products. For further particulars as to price, terms, etc., address C. E. Strong, R. F. D. No. 1, Box 57, Redondo Beach, Cal.

How to Make Money—Mrs. A. Basley's latest Poultry Book is without exception the best ever written. The secret of how to raise every turkey hatched and the "Basley Formulas," now published for the first time, are worth many times the price of the book. The "Western Poultry Book" is a practical book by a practical woman. Price, $1. Order from Cultivator Publishing Co.

Poultry Wanted—We pay the highest market price for all the local poultry we can get, no matter how large the quantity; also fresh ranch eggs. We remit immediately. National Poultry Co., successors to Allaway & Layton Co., 607 E. Third St., Los Angeles, Cal.

Wild Mallard Ducks, hand-raised for two generations; very gentle; will not migrate. Suitable for propagation and live decoys, $5 per pair; also Jap. Silkies, blue-ribbon stock, for quail and pheasant breeding, $5 per pair. Kellogg Orange Acres, East Bakersfield.

Baby Chicks—After Oct. 1st., White Minorcas, a very popular breed for all purposes. Golden Buff Leghorns—are fowls of beauty as well as heavy layers—all fall and winter chicks, $15.00 per 100; quality guaranteed. Sand Ridge Hatchery, Kerman, Cal.

Increase Your Heavy Layers—Introduce 230-egg type cockerels from trap-nested White Leghorns and get results. Four months old, 60 cents each. O. C. Hudson, R. D. No. 2, Escondido, Cal.

Wanted—Pullets—All ages and varieties, and laying hens for spot cash. Write us what you have, giving number, age and average weight. Pioneer Hatchery, 112 East 8th, Los Angeles, Cal.

Barred Rock Cockerels—(Hawkins Royal Blue Strain) ready for mating, also Barred Rock, R. I. Red, Buff and White Orpington day-old chicks every week. Enoch Crews, Santa Cruz, Cal.

Rhode Island Red baby chicks from heavy laying strain of fast-growing hens, they lay a large egg and lots of them. J. W. Lyon, Gardena, Cal.

White Leghorn baby chicks, McFarland strain, there is nothing to be had any better than this strain. J. W. Lyon, Gardena, Cal.

We have some fine Barred Rock Cockerels for sale at low prices, also a few Brown Leghorns cheap. G. L. Hawley, Madera, Cal.

Trap-Nested White Leghorns—Bargains in Cockerels from heavy layers. Only $1. A. R. Schroeder, Box C, San Gregorio, Cal.

Barred Plymouth Rocks—"None better." Special prices for May and June. Write for 'em. C. H. Vodden, Los Gatos, Cal.

Plymouth Rock baby chicks from strong, vigorous hens, two-year-old and great layers. J. W. Lyon, Gardena, Cal.

RABBITS

For Sale—New Zealand rabbits, the best meat producers. Mature does and bucks, $2.50 to $5.00 each. A grand lot of fine, red, half-grown youngsters. One buck and three does, unrelated, $5.00. Your chance to get a start of this splendid strain at small cost. Shipped anywhere. Standard Rabbitry, 1404 French St., Santa Ana, Cal.

New Zealand Reds—Prize stock, bucks and does, also thoroughbred Barred Rock eggs for hatching. Mrs. C. Richey, R. D. No. 8, Box 557, Los Angeles, Cal.

New Zealand Reds—Scored and sold on merit. Investigate. Our catalog is free. Caldwell Bros., Los Angeles, Cal. Box 613.

FARM LANDS FOR SALE

VICTORIA, AUSTRALIA, WANTS SETTLERS

Special inducements, government land, railways, two schools, cheap irrigation; 31 years to pay for farms adapted to alfalfa, corn, grains, fruit, etc.; climate like California, ample markets, reduced passages; special excursion being arranged. Free particulars from F. T. A. FRICKE, Government Representative from Victoria, 687 Market St., San Francisco, Cal., Box X.

For Sale—Deal direct with owner, an excellent 44⅔-acre fruit farm, splendid location, a great bargain if taken before Oct. 24th, part trade, part cash, terms on balance. Enquire Box 58, R. F. D. No. 1, Redding, Cal.

Free "True Blue" 1915 Booklet tells the "How," "Why" and "Where" of overlooked State and Government land bargains. Write California State Land Information Bureau, Sacramento.

Apple Orchards—Large and small, in the only apple producing section in California. The greatest section west of Missouri River. Write for booklet. Geo. W. Sill & Co., Watsonville, Cal.

Ranches, homes, acres, lots, exchange; send for free list. Wilson Bros., Santa Cruz.

WANTED

Local representatives to write orders for Roeding "True-Trees." Highly satisfactory selling plans and commission offered ranchers, fruit growers, real estate men or salesmen for a part of their time this Fall and Winter. Write at once for full particulars.
FANCHER CREEK NURSERIES,
Fresno, California.
Care Salesmen's Dept.

Wanted—Responsible party to take charge of business in each county. New Automatic Combination Tool, combined wire fence stretcher, post puller, lifting jack, etc. Lifts or pulls 3 tons, weighs 24 pounds. Sells to farmers, shops, teamsters, etc. Descriptive catalogue and terms upon request. Harrah Manufacturing Co., Box M, Bloomfield, Ind.

Married Man, 38, expert horseman, practical knowledge of Eastern farming, made deep study of farming and stock raising in West, wants a place where he can get practical experience in California methods. Best of references; small wages; competent to take charge. Address J. M. C., c|o California Cultivator Office.

A Well Drilling Business Opportunity—Two partners wanted. Small capital required. Semi-steel machines. Jetting machines have two good pumps. Liberal terms on deferred payments. Write at once. Oscar Dunton, 348 Brannan St., San Francisco.

Wanted—Man to run my 70-acre Alfalfa ranch, Pomona Valley, or my 45-acre young Valencia grove near Anaheim on salary, cash or share basis. Must have a bunch of cows or at least $1000.00. Herbert F. Clark, 419 So. Olive St., Los Angeles, Cal.

Wanted—Middle aged man experienced in all kinds of deciduous fruits, desires position as foreman on ranch. Moderate salary; best of references furnished. Address P. M. Y., 1611 So. Grand Ave., Los Angeles, Cal.

Wanted—By married man, position on ranch. Capable of doing any sort of ranch work. Expereinced. Open after October 1st. Address, giving salary and sort of work, F. A. R., P. O. Box 567, Oakland, Cal.

Farms Wanted—We have direct buyers. Don't pay commissions. Write describing property, naming lowest price. We help buyers locate desirable property Free. American Investment Association, 12 Palace Bldg., Minneapolis, Minn.

Wanted—Orders for finest quality, hand-embroidered, baby dresses at Three Dollars each, six for Fifteen. Hand-made, Six Dollars each. Write Mrs. Lieban, 961 W. 45th St., Los Angeles, Cal.

Wanted—To hear from owner of good farm for sale. Send cash price and description. D. F. Bush, Minneapolis, Minn.

SEEDS AND PLANTS

Grow Sudan Grass—The new forage crop—endures drouth, yields heavy, excellent in feeding value. Plants rogued and seed personally inspected by experiment station officials. The supply this year is limited. Seed one dollar per pound. B. D. Short, Rhome, Tex.

For Sale—Avocado Seed, also avocado seedling trees large enough for budding this fall. Prices based on quantity desired. Address H. A. Phelps, Sherman, Cal.

For Sale—A limited amount of White Tepary beans 15c lb., 100 lb. lots at a reduction. Dr. Geo. P. Clements, Buena Vista Rancho, Riverside, Riverside Co., Cal.

Thornless Cactus Slabs for sale at 5 to 15 cents each. Chas. R. Hanna, R. D No. 3, Riverside, Cal.

HORTICULTURAL PRINTING

Catalogues for the seed and nursery trade. The live stock and poultry industries are a specialty with us. Two thousand illustrations to select from. Write for prices and samples. The Kruckeberg Press, 237 Franklin St., Los Angeles.

BEES

Bee Keeping pays big; price list bees, instruction books free, samples and prices pure California honey, ten cents. Spencer Apiaries Co., Box 14, Nordhoff, Cal.

PHOTO SUPPLIES

Developing, 10c per roll; Printing, 2½x4¼, 3c; 3¼x5¼, 4c; Post Cards, 4c. **Denver Store,** 706 So. Hill St., Los Angeles.

The Woman of Experience

The woman who knows what's what always demands Ghirardelli's Ground Chocolate, because she knows and appreciates its true worth. In addition to its value as a tempting and strengthening beverage, it can be served and used in many practical ways. As a flavoring for puddings, ice cream, candy, cake, icing, sauces, etc., it is without an equal.

Begin using it to-morrow.

In hermetically sealed cans.

Ghirardelli's Ground Chocolate is the only original ground chocolate. It has been used in Western homes for over a third of a century and its popularity is growing day by day.

D. GHIRARDELLI CO.
Since 1852 San Francisco

The same high quality at the same low price you have always paid.

GHIRARDELLI'S GROUND CHOCOLATE

Mayer HONORBILT SCHOOL SHOES

WEAR like iron, give twice the service of other school shoes and cost no more. Made with double leather toes, strong pliable uppers and toughest sole leather obtainable. Seams sewed with extra rows of stitching. Perfect in fit and style.

WARNING—Always look for the Mayer name and trade mark on the sole. If your dealer cannot supply you, write to us.

We make Mayer Honorbilt Shoes in all styles for men, women, children; *Drysox*, wet weather shoes; *Yerma Cushion Shoes, Martha Washington Comfort Shoes.*

MILWAUKEE Mayer CUSTOM MADE
HONORBILT

F. Mayer Boot & Shoe Co., Milwaukee

Make $2000.00 more per Year

You Can Make Big Money With a well machine that makes irrigating wells fast and at a low cost. Demand for such wells is unlimited in California and the entire Southwest.
The best and fastest machine for this work and this territory is the
IMPROVED POWERS COMBINED BORING AND DRILLING MACHINE
Bores thru gravel, sand and clay like a streak of lightning. If rock is struck it drills thru that. Forces casings perperfectly. One man and one team can run it. You can make $1 an hour for your spare time.
Write today for catalog and EASY PAYMENT proposition.
LISLE M'F'G. CO., Dept. 5, 625 3d St., San Francisco

Household Department

CALIFORNIA

Written for California Cultivator

Del Norte to San Diego,
  Lake Tahoe to The Gate,
Mountain and valley and headland,
  Say, do we love our state?

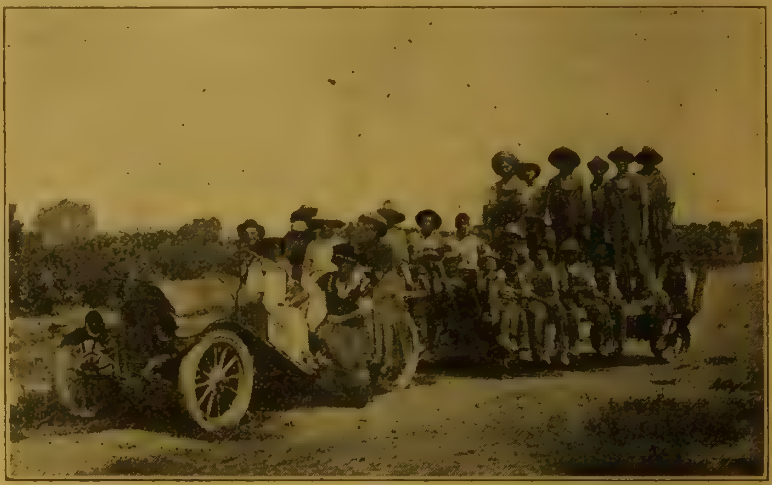
We that were born to her glories,
  We that have come of late,
Alike are we lovers and boosters—
  Yes, we are proud of our state.

In this year of her jubilation,
  When ocean and ocean mate,
Let us sweep and garnish and deck her,
  And make her our spotless state.

Del Norte to San Diego,
  Lake Tahoe to The Gate,
Queen of our hearts, our home land,
  California, our Golden State.

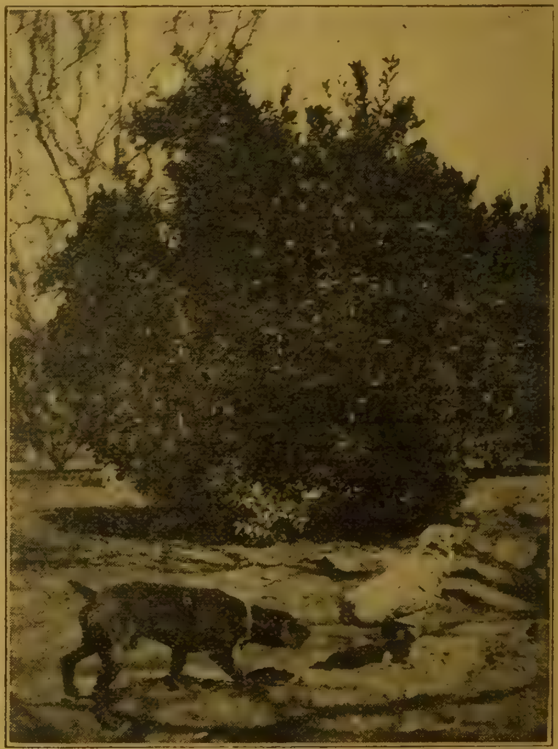
PRIZE PHOTOS FOR OCTOBER

We are surprised that with the 42 photos sent for the September contest October should go far better with a total of "57 varieties." From the 57 photos presented to the judges the two prize winners appearing on this page were chosen. We never had such a collection of good photos entered in a contest. There was hardly a poor one in the entire lot, though several lacked sufficient clearness to answer for engravings. We ask competitors for the November contest to make a point of developing plates with as much contrast as possible. Do not overtime. California light is wonderfully actinic.



CARRYING GRAPE PICKERS TO THE VINEYARD
First Prize Photo by Hirsehler Brothers, Reedley.

The first prize photo shows method of transporting workers from town to the orchard. It is a clear and effective photograph. The second shows skillful posing of a couple of farm pets. We imagine both sides are hoping for reinforcements. The picture creates a desire for a second view, or rather for a movie film which will throw further light on the very pointed discussion.



WAR—BOTH SIDES HOPING FOR REINFORCEMENTS
Second Prize Photo by Blanche Tiede, Santa Ana.

Another striking photo sent from the extreme northern end of the state was of a dog in the air, jumping at a cat on a post. We cannot even refer to the large number of photos sent, but will give reproductions of many of them in later Cultivators.

Regarding the November contest, we wish to call attention to a slight change. Two dollars will be paid for the first prize-winner, $1.00 for the second, and then for all photos which are accepted and retained a six months' subscription to the California Cultivator will be given. We will only keep photos from which we can make clean-cut engravings. This means that everyone who sends a photograph which will answer for an engraving will receive a prize. Photos for the November contest should be in this office by Thursday, October 29.

BOOSTING FOR CALIFORNIA

This is the day when all the newspapers of the state are boosting for California. Not that we don't all do it 365 days in the year, but this is a special extra, a sort of California Thanksgiving, when we count up our blessings and our assets for the great exposition year.

Nature, we know, has done her utmost for our state. Now what can we do to make her more attractive? We expect visitors from all parts of the world, and every one of us is planning to see the great expositions and to travel over the new highways to view the rest of California. We want to make our particular section beautiful both for the visitors from afar and for our neighbors.

Improvement clubs are pushing clean-up and planting campaigns in every section. Let us all join ardently and energetically in the community work; but most of all, let us make our own little individual corner a spot that we can show with pride.

THE NEXT PRIZE CONTEST

Don't forget the next prize contest.

Two Dollars

Two dollars in cash will be given for best short article describing a child's Hallowe'en party, a dinner, ride or any other form of Hallowe'en entertainment, giving, of course, that most interesting part of any party, "the eats."

One Dollar

Send your favorite recipe using walnuts. For the best will be given one dollar in cash.

Cultivator for Six Months

To all, not prize winners, whose articles or recipes are published, will be given six months' subscription to the California Cultivator. Remember, all suggestions should be mailed to California Cultivator, Los Angeles, by October 8.

Articles and recipes will be printed in the issue of October 15. Already a fine lot of recipes have come in, but we want more. Send us yours. Also try for that two dollars by sending in an account of a jolly Hallowe'en party.

A number of suggestions for the November contest have been received.

What would you like to have for the subject of that contest? Tell us when you send your articles.

HELPFUL THINGS

Written for the California Cultivator
By A. M. H.

One of the most helpful things in the home is a good cleaning fluid to use for cleaning men's and boys' clothes, dress skirts, carpets, etc. An excellent cleansing fluid for goods of any color or quality is made as follows: One-half ounce each of ether and spirits of wine, two ounces each of castile soap and ammonia, two and one-half quarts of rain water. Shave the soap fine and dissolve in the water, and when just warm add the other ingredients and bottle. For cleansing use one teaspoon to a pint of water, and clean water to rinse out the soap.

It is a good plan to keep a package of absorbent cotton in one of the sideboard drawers, as a bit of cotton applied instantly when grease of any kind is spilled on a garment will often remove all traces of the stains. There is nothing more useful in the kitchen than common baking soda. An excellent and cheap baking powder is made with four ounces each of soda and cornstarch and eight ounces of cream of tartar. This must be well mixed and sifted.

Soda added to the water for scrubbing the bare floors and tables makes them white and saves labor, and tinware is brightened by rubbing with soda and then with a piece of soft, dry flannel. The nickel plate of the stove may be brightened with soda and ammonia, using a woolen cloth and polishing with a dry one. And use hot soda water for a greasy sink. There is nothing more useful in the home than a bottle of strong boric solution. This can be weakened as desired. The strong solution is prepared by putting two heaping tablespoons of boric powder in a cup and making into a paste with hot water. Then this is stirred in a quart of hot water and put in a bottle ready for use. A little of this solution applied to small cuts and wounds will often cure them without any further trouble, and when you have a bottle of this boric solution you have one of the best home remedies for weak eyes, and it makes an excellent wash for the mouth and throat and for all kinds of skin troubles. It is also excellent as a douche for bowel troubles. And where germs are present this solution will tend to destroy them.

The NATIONAL Money-Saving Style Book
Fall & Winter 1914-1915

First and Foremost in Fashions

New "NATIONAL" Fall Style Book

FREE to YOU

Your new "NATIONAL" Fall Style Book is ready and waiting for you. Never have we offered you such a complete style book. Never have you seen so many beautiful styles in wearing apparel—and never have you seen such big bargains. Just mail the coupon now or send a postal today for the big book of "NATIONAL" Money-Saving Bargains.

"NATIONAL" Money-Saving Bargains

Waists	49c to $7.98
Skirts	$1.98 to $7.98
Ladies' Silk and Serge Dresses	$2.98 to $27.50
Ladies' Ready-Made Suits	$7.98 to $15.98
Ladies' Tailored Hats	49c to $6.98
Ladies' Coats	$4.69 to $25.00
Furs	$1.95 to $16.98
Ladies' Shoes	85c to $3.98
Petticoats	29c to $4.98
House Dresses and Kimonos	69c to $4.98
Gloves	17c to $2.75
Corsets	49c to $5.00
Muslin Underwear	15c to $3.98
Sweaters	49c to $4.98
Silk and Serge Dresses for Misses and Small Women	$2 98 to $14.98
Coats for Misses and Small Women	$4.98 to $15.98
Suits for Misses and Small Women	$7.98 to $15.98
Boys' and Young Men's Clothing	$2.49 to $12.98
Junior Misses' Dresses	$1.69 to $8.98
Junior Misses' Coats	$3.98 to $9.98
Junior Misses' Suits	$6.98 to $10.98
Children's Dresses	50c to $6.98
Children's Coats	$2.98 to $6.98
Children's, Misses' and Infants' Shoes	29c to $2.95
Infants' Dresses and Coats	29c to $5.75

Also a full line of Underwear, Hosiery, Scarfs, Veils, Gloves, Sweaters, Leather Goods, Jewelry and a complete line of Boys', Misses' and Children's Wearing Apparel. Don't forget to mail the coupon.

And Please Remember: The "NATIONAL" has been for 26 years the *foremost* house of *fashions*—the first in the field—the first to sell direct to the women of America, New York City styles at low prices not to be equaled anywhere. *You*, too, can dress fashionably and becomingly at low cost through the "NATIONAL"—just as many thousands of women are doing all the time.

The "NATIONAL" Policy

We prepay postage and expressage on all our goods to all parts of the world. Every "NATIONAL" garment is sold under the "NATIONAL" Guarantee, which says that you may return any garment not satisfactory to you and we will refund your money and pay postage or express charges both ways.

No Agents
No Branches

National Cloak & Suit Co.
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Fill This In and Mail It Today
Free Money-Saving Coupon

NATIONAL CLOAK & SUIT CO. 270
270 West 24th Street, New York City

Please send me, Free, my copy of the Money-Saving "NATIONAL" Fall Style Book.

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Light, Cook and Heat with Aero-Gas

You can cook with gas even if there is no Gas Company in your town. The Aero-Gas self-generating plant, made expressly for private country homes, furnishes you with inexpensive best quality gas—either for cooking or lighting.

With the Aero-Gas system, you can use ordinary quality automobile gasoline, which you can get anywhere.

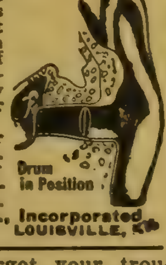
No danger, no odor, no delay, no bad air to breathe, because Aero-Gas takes no oxygen from the room.

Positively non-explosive should it escape into the room—you couldn't light it even if you tried to! Non-injurious to animal and plant life.

A postal will bring descriptive booklet. Send for it today.

Utility Gas Generator Company
340c Sansome St., San Francisco

When writing advertisers, mention the Cultivator.



Deafness

From All Causes, Head Noises and Other Ear Troubles Easily and Permanently Relieved!

Thousands who were formerly deaf, now hear distinctly every sound—even whispers do not escape them. Their life of loneliness has ended and all is now joy and sunshine. The impaired or lacking portions of their ear drums have been reinforced by simple little devices, scientifically constructed for that special purpose.

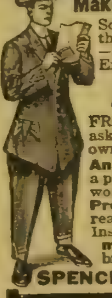
Wilson Common-Sense Ear Drums

often called "Little Wireless Phones for the Ears" are restoring perfect hearing in every condition of deafness or defective hearing from causes such as Catarrhal Deafness, Relaxed or Sunken Drums, Thickened Drums, Roaring and Hissing Sounds, Perforated, Wholly or Partially Destroyed Drums, Discharge from Ears, etc. No matter what the case or how long standing it is, testimonials received show marvelous results. Common-Sense Drums strengthen the nerves of the ears and concentrate the sound waves on one point of the natural drums, thus successfully restoring perfect hearing where medical skill even fails to help. They are made of a soft, sensitized material, comfortable and safe to wear. They are easily adjusted by the wearer and out of sight when worn.

What has done so much for thousands of others will help you. Don't delay. Write today for our FREE 168 page Book on Deafness—giving you full particulars.

WILSON EAR DRUM CO., Incorporated
116 Inter-Southern Bldg. LOUISVILLE, Ky.

If you want to forget your troubles, buy a pair of tight shoes.



A NEW WAY
To Get Your Clothes Free

Make Big Money During Spare Time

Something Different, bigger, more liberal than any offer ever made. **Lower prices—better clothes—bigger cash profits** Express paid on everything.

Double Pay

FREE clothes and cash besides. We don't ask you to use your cash profits for your own clothes. Ours is a new and better plan. **An Extra Present** with every order. Not a prize scheme. Choose what you want, work for it and get it besides your **Cash Profits. Complete Outfit FREE,** 56 real cloth samples, 50 Fashion Plates. Inside wholesale prices. Get the **big money. Your name on a post card** brings **everything FREE.**

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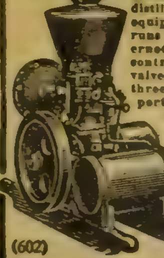

20 Reasons Why You Should Investigate the **SANDOW Kerosene** Stationary ENGINE

It runs on kerosene (coal oil), gasoline, distillate and alcohol without change in equipment — starts without cranking — runs in either direction—throttle governed—hopper and tank-cooled—speed controlled while running—no cams—no valves — no gears — no sprockets — only three moving parts—light weight— easily portable—great power—starts easily at forty degrees below zero—complete ready to run—children operate them—low factory prices based on enormous out put—30 day money-back trial—10 years iron-clad guarantee. Sizes, 1 1-2 to 18 horsepower.

Send a postal today for free catalog which tells how Sandow will be useful to you. No go-betweens. Pocket agents' and middlemen's commissions by dealing direct with factory. (602)

(602)

Detroit Motor Car Supply Co.
191 Canton Ave., Detroit, Mich.

San Francisco--Los Angeles Produce Markets

Los Angeles Market

LOS ANGELES, Sept. 30, 1914.

The prices given below, except where otherwise noted, are those made by wholesale or commission houses to retailers, and are intended to give producers the range of the market rather than an indication of prices which they will secure. Jobbers' quotations to producers are not given.

BUTTER

Butter arrivals are rather heavier notwithstanding that an advance of one cent is made on upper grades.

Prices to trade 4 cents above following quotations:

Creamery Extras	27
Firsts	24
Country	21
Ladle	20

CHEESE

Prices to trade 1 and 2 cents higher:

California Fresh	14@14½
Domestic Swiss	19@20
Imported Swiss	35@37
Longhorn	19@20
Oregon Triplets	18@18½

EGGS AND POULTRY

The egg situation is featureless at this time, though during the last of the week an advance of one cent was made.

Prices to trade 3 cents higher than following quotations:

Fresh ranch, case counts	36
Candled	38@39
Northern Case Count	41
Petaluma-Santa Rosa	42

Prices to producers:

Hens, lb.	14@19
Roosters, old	9
Broilers, lb.	20
Fryers	18
Roasters, lb.	17
Turkeys	18@26
Ducks	12
Geese	14
Squabs, doz.	2.00

LIVE STOCK

The following quotations are f. o. b. Los Angeles on all stock:

Hogs, 175 to 200 lbs., per cwt.	8.75
Prime Steers	7¼@7½
Heifers	6¼@6½
Calves, lb.	8½
Sheep—	
Ewes, head	4.00
Wethers	4.25@5.00
Lambs, head	4.50@4.75

POTATOES

Wholesale selling price:

Sweets, sack	1.65@1.75
Northern Burbanks, cwt.	1.30@1.40
Shimas	1.45@1.55
Lompocs	1.90@2.00

ONIONS

Wholesale selling price:

Australian Brown, cwt.	90@1.00
Silverskins, cwt.	1.90@2.00
Yellow Danvers, sack	90@1.00
Garlic	13@15

VEGETABLES

Wholesale selling price:

Artichokes, Northern, doz	40@90
Beets, doz.	30@35
Beans, String	5@6
Lima	4@5
Cabbage	60@65
Carrots, doz.	30@35
Cauliflower, doz.	90@1.05
Celery, doz.	40@50
Corn, Sugar, box	60@65
Field corn, sack	1.50@1.60
Cucumbers, lug	35@45
Pickling, lug	1.20@1.35
Egg Plant	3½@4
Escarole, doz.	40
Horseradish, lb.	12@13
Leeks, doz.	35@40
Lettuce, crate	90@1.00
Mint, doz.	35@40
Okra, lb.	6-7
Onions, Green, doz. bunches	15@20
Oyster Plant	30@35
Parsnips, doz.	30@35
Peas, lb.	5@8
Peppers—	
Bell, lb.	3@4
Chili, lb.	3@4
Radish, doz.	20@30
Rhubarb, box	80@1.35
Spinach, doz.	20
Squash—	
Summer, lug	30@35
Crookneck	30@45
Hubbard, lb.	2¼@3
Turnips	30@40
Tomatoes, lug	40@50

FRESH FRUIT

Wholesale selling price:

Apples—	
Banana Apples	1.00@1.15
Bellflowers	70@90
Jonathans	1.25@1.35
King Davids	1.10@1.25
Crabapples	1.00@1.10
Bananas	3½@4
Berries—	
Strawberries, basket	3@5
Raspberries, basket	8@9
Blackberries, basket	3@4
Cantaloupes—	
Locals, small	1.10@1.25
Locals, large	1.50@1.85
Casabas, doz.	85@1.00
Cranberries, bbl.	8.00@8.50
Figs, 2-layer box	80@1.00
Grapes—	
Cornichon	90@1.00
Concord	1.25@1.35
Malagas, crate	90@1.00
Muscatels, lug	75@85
Tokays, lug	90@1.00
Peaches, lug	80@1.00
Pears, Bartlett, lug	1.20@1.25
Seckel	85@1.00
Pineapples, lb.	6@6½
Plums, lug	1.25@1.40
Quinces	15@75
Watermelons, lb.	¾@1½

CITRUS FRUIT

Wholesale selling price:

Lemons	1.50@3.50
Grapefruit, Seedless	2.25@2.50
Valencias	1.75@2.35
Limes, basket	1.50

DRIED FRUITS

Wholesale prices to retailers are:

Evaporated Apples, Fancy, lb. boxes	6½@12½
Apricots	9@11
Nectarines	12½
Peaches	6@7½
Pears	8@12
Prunes	5¾@11
Plums	10

NUTS

Prices named by California Walnut Growers' Association are:

No. 1	16½
Budded Walnuts	20
Jumbos	19
No. 2	12
Culls	9

Prices fixed by California Almond Growers' Exchange, f. o. b. California.

Almonds—	
Nonpareil	21
I X L	20
N P U	19
Drake's Thinshell	15
Pecans	17
Peanuts—	
California, Raw	6
Japan	7½
Eastern	7½
Rice Corn	5.00@5.25

HONEY

Wholesale selling price:

Comb, Fancy, Water White	15
White	13
Light Amber	12
Extr. Water White	8
White	7½
Light Amber	6½
Beeswax	32

BEANS

Wholesale selling price:

Producer's price not far from one dollar under these quotations:

Limas	6.50@7.00
Lady Washington	5.50@5.60
Black Eyes	6.50@7.50
Pinks	4.50@4.75
Lentils	7.50@9.00
Small White	5.75@6.25
Garbanzos	8.00@8.50

RICE

Wholesale selling price:

California	5.00
Broken	4.00

HAY

Buying prices f. o. b. cars Los Angeles:

Barley	10.00@11.00
Wheat Hay	10.00@11.00
Tame Oat	11.00@13.00
Alfalfa	9.00@11.00

GRAIN

Wholesale selling prices f. o. b. Los Angeles:

Corn, Yellow	2.20
Corn, White	2.30
Wheat	2.00
Oats, Red	2.35
Oats, White	1.65
Kaffir Corn	1.90
Millet	3.75
Popcorn	4.75@5.00
Egyptian Corn	2.30
Barley Seed	1.45
Milo Maize	2.00
Cal. Seed Oats	2.25
Sunflower Seed	5.25@5.35

FEED STUFF

Wholesale selling prices f. o. b. Los Angeles:

Bran, Heavy	1.75
Alfalfa Meal	1.05
Alfalfa-Syrup, per cwt.	1.05
Beef Scraps	3.00@3.10
Beet Pulp	1.25
Cracked Corn, cwt.	2.20
Cracked Wheat, cwt.	2.15
Cotton Seed Meal	1.85
Bloodmeal	3.60@3.70
Bone Meal	2.00@2.10
Bone Green	1.95@2.05
Charcoal	1.90@2.00
Oil Cake Meal	2.05
Fish Meal	3.15@3.25
Rolled Oats	1.70
Rolled Barley	1.30
Middlings	2.00
Oat and Wheat Middlings	1.55

San Francisco Market

SAN FRANCISCO, Sept. 29, 1914.

The prices given below, except where otherwise noted, are those made by wholesale or commission houses to retailers, and are intended to give producers the range of the market rather than an indication of prices which they will secure. Jobbers' quotations to producers are not given.

BUTTER

Butter dropped slightly soon after last week's quotations, but has remained since Sept. 25 at present quotations.

Prices to trade 4 cents above following quotations:

Extras	28
Prime Firsts	27
Firsts	25
Seconds	24

CHEESE

Wholesaler to retailer.

Oregon Y. Am	16
California Flats	12@14
Cheddar	20
Oregon Twins	16

EGGS AND POULTRY

Produce Exchange has fixed upon 41c as the prevailing price for extras. Pullets dropped slightly during the latter days of last week, but regained on Monday to within ½c of last week's quotations.

Prices to trade 3 cents higher than following quotations:

Extras	41
Select Pullets	33
Steers	4@7

Price to producer:

Hens	15@18
Fryers	20@21
Roosters, old	12
Roosters, young	20@22
Broilers	19@21
Belgian Hares, lb.	10@11

LIVE STOCK

San Francisco prices, gross weight:

Steers	4@6¾
Cows and Heifers	3@6¼
Calves, lb., live weight	6@9½
Hogs	9@10¼
Wethers	5@5½
Ewes	4½@5
Milk Lambs	6½@6¾

POTATOES

Wholesale selling price:

Delta, Burbanks	70@1.00
Salinas Burbanks	1.45@1.60
Sweets, cwt.	1.40@1.50

ONIONS

Wholesale selling price:

Yellow, sack	40@50
Garlic, new	10@12½

VEGETABLES

Wholesale selling price:

Beans—	
Wax, lb.	1½@2½
Strings	1½@2½
Limas, lb.	2½@3
Cabbage, cwt.	1.00@1.25
Carrots, sack	35@50
Celery, doz.	20@35
Corn, Green, sack	1.00@1.75
Cucumbers, lug	25@40
Egg Plant, lug	25@40
Peas, lb.	3@5
Peppers—	
Bell, lug	30@40
Chili, crate	50@65
Rhubarb, box	60@1.00
Tomatoes, lug	10@25

FRESH FRUIT

Wholesale selling price:

Apples—	
Bellflowers	65@75
Crabapples	40@85
Spitzenbergs	65@90
Bananas, Hawaiian, bunch	1.25@1.75
Blackberries, chest	4.00@6.00
Cantaloupes, crate	75@1.25
Delta, lug	20@35
Casabas	50@75
Figs—	
Black, double layer	50@65
White, box, single layer	25@35
Grapes—Crates	
Black	25@40
Tokay	40@
Seedless	40@
Malagas	40@
Muscats	50@
Huckleberries, lb.	5
Nectarines, crate	75@1.
Peaches, lugs	20@
Pears, box	65@1.
Bartletts, wrapped	1.25@2.
Bartletts, lugs	50@
Winter Nelis, box	75@1.
Other varieties	25@
Plums, crate or lug	75@1.
Pomegranites	50@1.
Pomegranites	50@
Persimmons	1.00@1.
Prunes, crate	60@1.
Quinces, box	75@1.
Strawberries, chest	1.50@3.
Watermelons, doz.	75@1.

CITRUS FRUIT

Wholesale selling price:

Grapefruit, Seedless	1.00@2.
Lemons	2.00@5.
Lemonettes	5.00@6.
Valencias	1.25@2.

DRIED FRUITS

Wholesale prices are:

Prunes—1914 crop, bulk basis, 30-4 6½c@6¾c; 40-50s, 6@6¼c; 50-60s, 5 @5¾c; 60-70s, 5½@5¾c; 70-80s, 5¼ 5½c; 80-90s, 5¼@5½c; 90-100s, 5¼ 5½c. 1913 crop worth practically san prices. The above are for Santa Cla Prunes, outside sections about ¼c.

Other Fruits 50-lb. boxes—	Standard.	Ch.	Extra Ch.	Fc
Evaporated Apples	5¾c	6 c	7	
Apricots	6½c	7½c	8 c	8
Peaches	3½c	4 c	4¼c	5
Pears	7 c	8 c	9 c	10

RAISINS

RAISINS—The following prices are o. b. Fresno, as given out by the Ass ciated Raisin Company for Septemb shipment, and with the exception bulk seeded and ungraded Muscate are guaranteed against a decline to D cember 31st; Fancy seeded, 16-o 6½c; 12-oz., 5½c; bulk, 6c; choice see ed, 16-oz., 6⅛c; 12-oz., 5c; bulk, 5½ loose Muscatels, 2-crown, 5c; 3-crow 5¼c; 4-crown, 5¼c; ungraded, 5c; 19 crop—Thompson Seedless, No. 1, pkg 7⅜c; 12-oz., 6c; 50-lb. cs., 6¼c; Su tanas, 50-lb. cs., 5½c; bulk, layers, 5 lb. bxs., $2.75; in 20-lb. bxs. 6-crow $2.75; 5-crown, $2.25; 4-crown, $1.60; crown, $1.30; 5-lb. bxs. on all bu stock, 50c additional; 10-lb. bxs., 2 additional. Car tons—Clusters, 20 to case, No. 1, $1.70; No. 2, $2.10; No. 5, to a case, $2.25. Local representativ of the association are asking about ½ higher, while several of the larg packers are quoting ½c under the figures.

NUTS

ALMONDS—Prices fixed by Almo Growers' Exchange to the trade, f. b. California:

Nonpareil	
I X L	
Ne Plus Ultra	
Drakes	

Wholesale selling price:

Peanuts—	
Unpolished	5
Polished	6@6
Japanese, Shelled	6¼@6
Italian Chestnuts	6¼

BEANS

Wholesale selling price:

Limas	6.25@6.
Lady Washington	4.50@4.
Pink	4.00@4.
Black Eyes	4.50@4.
Cranberry	4.25@4.
Small White	5.25@5.
Garbanzos	5.00@5.
Large White	4.50@4.
Bayou	5.00@5.
Manchurian Speckled Bayous	3.75@4.
Manchurian Butters	4.50@4.
Manchurian Cranberry	4.00@4.
Red Mexican	5.
Horse Beans	1.90@2
Bayou, Mexican	5.00@5.

HONEY

Comb, Water White	14@
Amber	10@
Dark	7@
Extracted White	7@
Light Amber	6
Dark	4@5
Beeswax	27@

HOPS

1914

Sacramento Valley	16½@17
Sonoma-Mendocino	18@
Oregon Clusters	1

HAY

Under date of September 26 Scot Magner & Miller say:

Receipts of hay for the past wee were 4403 tons. The demand continu very light. A few cars of fancy ha have arrived and sold without any di ficulty. Some hay has moved for ex port, which has helped materially i the moving of arrivals. Demand fo alfalfa is very light and receipts ar increasing.

We quote the average wholesal prices on carload lots on today's mar ket as follows:

Fancy Wheat Hay, lt. bales	11.00@12.0
No. 1 Wheat or Wheat and Oat	8.00@9.0
No. 2 Wheat or Wheat and Oat	6.00@7.5
Choice Tame Oat	10.00@11.0
Other Tame Oat	7.00@9.0
Barley	6.00@8.0
Wild Oat	6.00@8.0
Alfalfa	6.00@9.0

WEATHER CONDITIONS

For week ending Sept. 26, 1914.

Report from the various stations of the U. S. Weather Bureau, by Geo. H. Wilson, director, San Francisco:

	Rainfall Data			Temperature Data.	
	Past Week.	Seasonal to Date.	Normal to Date.	Maximum.	Minimum.
Eureka	.14	1.68	1.08	62	46
Red Bluff	.00	T	.63	96	54
Sacramento	T	T	.28	92	54
San Francisco	.00	.02	.21	78	52
San Jose	.00	.00	.30	86	48
Fresno	.18	.20	.16	96	56
Independence	.02	.18	.12	88	48
San Luis Obispo	T	T	.38	82	50
Los Angeles	.00	.01	.02	88	58
San Diego	T	T	.02	78	62

T means trace.

Stock Hay	4.50@5.00
Straw, new	30@45

GRAIN

Wheat, Cal. Club	1.70@1.72½
Corn, Eastern Yellow, blk.	1.82½@1.83¾
Barley, Feed	1.10@1.12½
Oats, White	1.55@1.60
Oats, red	1.40@1.50
Millet	3@3½
Flax	5@6
Rye	1.50@1.60
Sunflower	5@5½

FEED STUFF

Alfalfa Meal, car lots	11.50@12.50
Bran, ton	30.00@30.50
Feed Cornmeal, ton	43.00
Cracked Corn	43.00
Rolled Barley, ton	25.00@26.00
Rolled Oats, ton	37.00@37.50
Middlings	32.00@34.00
Shorts	31.00@31.50
Oilcake Meal	32.00@33.50
Cocoanut Oilcake Meal	23.00@24.00

Citrus Fruit Market

LOS ANGELES, Sept. 30, 1914.

A statement has been published that the exchange has sold its fruit on an average for all grades of all kinds of fruit at $1.71 f.o.b. The enemies of cooperation have taken up the statement, one paper even giving place to a communication in which the writer said that Washington navels had sold for $1.71 f.o.b. and asked why the growers had not secured more. The statement was simply one which the exchange issues every year and covered all grades of all fruit, including lemons, which sold for a time at very long prices.

Oranges as a rule have done fairly well this season considering depressed financial conditions and an immense crop both in this state and Florida. At the present time the market is steady and sales are being made at fair prices. There are perhaps 2000 cars of Valencias yet to go.

There has been no material change in the lemon market.

Shipments

Shipments of oranges to date since November 1, 1913, from Southern California, 37,047 cars, lemons 2,746, total 39,793. To same date last season, oranges 13,270 cars, lemons 2,156, total 15,436. Total shipments of all citrus fruits two years ago, this date: 34,837.

NEW YORK, Sept. 28.—Twenty-one cars Valencias sold. The market is strong on Valencias, with prices 10 to 20 cents higher. Market 25 cents higher on lemons. Weather fair.

VALENCIAS—	Avg.
Dos Palmas, San Marino Growers	$2.45
El Toreador, San Marino Growers	2.20
Mt. of Olives, Growers Ft. Co	3.00
Olive Heights, Growers Ft. C	2.60
Angeles, Growers Ft. Co	2.35
Old Mission, xf., Chapman	3.65
Rooster, Or. Ex	2.90
Sarchlight, Or. Ex	2.60
Stag A. C. G. Ex	2.90
Pointer, A. C. G. Ex	2.60
Hunter, A. C. G. Ex	2.05
Kenilworth, A. H. Ex	3.00
Peasant, A. H. Ex	2.65
Peasant, marked T	2.70
Plain ends, marked T	2.25
Plain ends, marked T	2.25
Geo. Washington, Or. Tustin	2.95
Martha Washington, Or. Tustin	2.85
Blue Hussar, O. K., Ex	2.85
Green Hussar, O. K. Ex	2.40
Red C, Covina Ex	2.55
Cougar, Covina Ex	2.30
Old Mission, fy., Chapman	3.05
Golden Eagle, sd., Chapman	2.55
Mt. of Olives, Growers Ft. Co	3.05
Olive Heights, Growers Ft. Co	2.75
Red Bow, Blue Ribbon Groves	2.55
Golden Elephant, Elephant Or	2.90
Gray Elephant, Elephant Or	2.65
Argo	1.80
Dulce, Harper Ft. Co	1.50
GRAPEFRUIT—HALVES—	
Mahala (brown boxes)	$1.35
Mahala (white boxes)	.95
Blue Bow	.80
LEMONS—	
Pet. S. D. Ex	$2.45
Greyhound	3.80

CLEVELAND, Sept. 28.—Three cars Valencias sold. Firm on good fruit. Cool, clear.

VALENCIAS—	Avg.
Alhambra, S. T. Los Angeles	$2.55
Colombo, S. T. Placentia	2.30
Las Palmas, S. T. Placentia	1.95
Conqueror, Ind. Ft. Co	1.70

CHICAGO, Sept. 28.—New apples, 2.00@4.50 per barrel. Lemons, California, 4.00@5.00 per box. Oranges, 2.75@4.00. Peaches, 30@1.25 per bushel basket, 15@20 per one-fifth bushel basket. Pears, 2.00@5.00 per barrel. Lima beans, 22* per quart. Onions, 75@1.25 per sack. Peppers, 25@65 per tomato box.

CINCINNATI, Sept. 28.—Cool. Market is advancing. One car sold.

VALENCIAS—	Avg.
Pointer, A. C. G. Azusa	$2.85
Hunter, A. C. G. Azusa	2.50
Green Crown, A. C. G. Azusa	2.70

PHILADELPHIA, Sept. 28.—Five cars sold. Cool.

VALENCIAS—	Avg.
Fort Pitt, A. C. G. C. Oak	$2.45
Old Mill, A. C. G. C. Oak	2.10
Glendora Alps, A. C. G. Glen	3.60
Mt. of Olives, Growers Ft. Co	3.10
Olive Heights, Growers Ft. Co	2.70
Dos Palmas, San Marino G	2.55
Angeles, Growers Ft. Co	2.30
El Toreador, San Marino G	2.25

One car Florida grapefruit sold, $2.80 to $4.50.

ST. LOUIS, Sept. 28.—Clear and cool. Market steady. Four cars Valencias sold.

VALENCIAS—	Avg.
Pala Bells, R. H. Redlands	$2.60
Pearl, R. H. Redlands	2.00
Searchlight, Or., Orange	2.50
Cornucopia, R. H. Mentone	1.65
Glendora Heights	2.70
Evolution	2.60

BOSTON, Sept. 28.—Six cars oranges, two cars lemons sold. Cool, cloudy. Market doing better on oranges and lemons.

VALENCIAS—Avg.	
Mohawk, Or., Orange	$2.80
Reliable, S. T. La Habra	2.40
Reliable, S. T. La Habra	2.35
Quality, S. T. Nordhoff	2.75
Campfire, S. T. La Habra	2.20
Blue Banner, Sutherland Ft. Co	2.80
Aurora, Amer. Ft. Dis	2.70
Green Banner, Sutherland Ft. Co	2.30
Sappho, Amer. Ft. Dis	2.25
Native, Sutherland Ft. Co	1.90
LEMONS—	
Windermere, Windermere Ranch	$4.30
Purity, Or., Tustin	3.05
Evergreen, Or., Tustin	2.10

PITTSBURG, Sept. 28.—Two cars of oranges sold. Cool.

VALENCIAS—	Avg.
Jasmine, D. M. Monrovia	$2.35
Iris, D. M. Monrovia	3.40
Jasmine, D. M. Monrovia	2.45

FEDERAL AID TO CALIFORNIA

(Continued from Page 317)

tions of the county, and the county must bear office and other expenses, the federal fund being drawn on only for salary of the adviser. The counties which have so far taken advantage of this law, and their advisers are as follows:

Alameda, Walter Nixon, College of Agriculture, Berkeley.
Humboldt, A. H. Christiansen, 2436 F. St., Eureka.
Kern, Roland B. Mack, Bakersfield.
Madera, Thos. C. Mayhew, Madera.
Napa, H. H. Baade, Napa.
San Diego, Jas. A. Armstrong, Court House, San Diego.
San Joaquin, Frank Lyons, Chamber of Commerce, Stockton.
Ventura, Wm. B. Parker, Ventura.
Yolo, N. P. Searles, Woodland.

VETERINARY

(Continued from Page 328)

properly cared for soon after the accident. The old hoof will not grow back and all the loose parts should be carefully removed. Then wash the foot clean and wrap it with surgeon's cotton and cover with a bandage. Before applying it to the foot the cotton should be soaked in a solution of permanganate of potash, one part to 100 parts of water. This treatment should be repeated once a day until the proud flesh disappears. With proper care from the first a perfect new hoof probably would have grown. Now you will get a new hoof, but it may be slightly deformed.

SILOS AT EXPO.

The De Laval Dairy Supply Company have erected on the Panama-Pacific Exposition grounds a 16-foot by 35-foot 140-ton capacity Ideal Green Feed Silo, the first of six silos that are to be used by the Exposition Company. These silos are to be filled with corn ensilage. This Ideal Green Feed Silo is the first completed working exhibit on the exposition grounds. This fact in itself demonstrates that the De Laval Dairy Supply Company, who were the pioneers in the introduction of the commercial silo in California, are a progressive and up-to-date concern.

UNPREJUDICED.

"How many people are there here, Pat?" queried the Englishman of an Irishman in Montreal.

"Oh, about a hundred thousand."

"Why, I thought there were over half a million?"

"Well," said Pat, "there is—if you count the Frinch."—Canadian Courier.

PIPE PIPE PIPE

Last chance to buy Aqueduct pipe. Prices reduced to close out this month the small amount left. Over 150,000 feet sold in last 4 months. This is good, clean pipe—used only for clean water purposes along the famous Aqueduct. Just as good as new pipe—and price very much less. Prompt shipments to any railroad station. Mail or phone your orders immediately, as this opportunity will not last. AQUEDUCT PIPE CO., 1327 West 7th, Los Angeles. Phone Wilshire 1315. Sizes left: 1-inch, 2-inch, 3¼-inch, 3½-inch.—Adv.

SILOS

Silos have been used in the eastern and middle states for the past 25 years, but their extensive use has been in the last ten years. Prior to that the growth of the silo idea was slow, due largely to the experiments which silo users made. They started in by digging pits in the ground and burying the silage. This left it open to the operation of frost, and the result was very poor. They then built pits, lined them with concrete and extended them either with concrete or with staves above the ground. This style of silo was more successful than the first one, but still open to a great many objections. It usually cost more to pitch the silage out of the hole dug in the ground than the proper form of silo above the ground would cost them originally. They also had a leaky point in the middle of their silo, which caused a great deal of spoiled silage both above and below that point.

The next step was the construction of what is known as "homemade silos." Almost every agricultural experimental station bulletin and a great many of the rural papers contain voluminous instructions as to how to construct a homemade silo for little or nothing. Many farmers have tried this to their sorrow. It is possible for an expert farmer to build a homemade silo, but when he gets all through, if he has a successful one, he may have spent more money than it would have cost him to buy a silo already built from a factory. The great factories that are now manufacturing silos build them by the hundreds, have expert men doing the same thing every day, which renders them more expert, and in general applying what is called "economy of operation" to the manufacture of the silo. In this way they can manufacture a better silo, include a profit for themselves and still sell it to the consumer for as little or less money than he can put up one of the so-called "homemade" variety. The homemade silo manufacturer is at the mercy of the local lumber dealer, whose lumber prices are invariably higher than those of the manufacturer of the factory silo. He is then hampered by amateur help and by a lack of experience such as the expert in a factory naturally acquires through doing the same thing every day.

The history of silo progress in Kansas, Nebraska, Iowa, Illinois and Ohio is repeating itself in California, and the result will probably be the same—namely, that the farmers and stockmen will cease experimenting with crude, homemade silos and turn to the factory silo. The only homemade silo that is at all effective is the concrete silo, and this is expensive. As the use of silos is increasing in California to a tremendous extent, it would pay the prospective users of silos to study thoroughly the history of the so-called "homemade" silos before experimenting themselves; also to apply the ultimate cost as against the cost of a factory-made silo which is guaranteed and effective from the start.

The General says:-

There are many *plausible* "tests" of roofing, but there is only one *true* test—the proof on the roof.

Therefore, roof your buildings—every building on the farm—with

Certain-teed ROOFING

—the roofing with a 15-year-service-guarantee. The three biggest roofing mills in the world are behind it, to make that guarantee good.

Your dealer can furnish *Certain-teed* Roofing in rolls and shingles—made by the General Roofing Mfg. Co., *world's largest roofing manufacturers*, East St. Louis, Ill., Marseilles, Ill., York, Pa.

Save Money!

Buy Building Material at Spot Cash Prices!

We have a full and complete stock of both new and second-hand lumber.

⅜x4 new ceiling. Per M.	$12.00
2 in. Dimension lumber. Per M.	$11.00
2x4—8 ft. Per M.	$10.00
New redwood shingles. Per M.	$1.75
New lath. Per M.	$2.50
Old lath. Per M.	$1.75
PLUMBING	
Cast iron enamel tubs	$14.00
Lavatories	$3.75
High closet combination	$12.00
Low closet combination	$14.00
Steel enamel combinations	$13.00
Cast iron enameled sinks	$1.25
WALL BOARD	
Former price $25; now	$19.00
Corrugated iron. New stock, per square; now	$3.75
Roofing paper; ready to lay; per roll	$ 1.00 up
Guaranteed house paints in all colors; per gallon	$1.50
Shingle stain and black graphite roof paint; per gal., 50c; in barrels, per gal	40c
SASH AND DOORS	
Five-panel Colonial doors, all styles	$1.00
Four-panel O. G. door	$1.25
New full screen doors; Mission stain	$1.00

A full and complete line of new and second-hand sash.

See us for everything in Building Material.

SPOT CASH WRECKING CO.,

CORNER OF 7th and Central.
All cars transfer.

SAVE THE MIDDLEMAN'S PROFIT

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Best Quality Crystal Beet Pure Granulated Sugar, 20 lbs. $1.00 With $10 Grocery Order exclusive of Sugar

100 lbs. Granulated Sugar for $5.00 with $50 Grocery Order

3-lb. can Ben Hur, Iris, Red Hussar and Newmark's Steel Cut highest grade Coffees, your choice $1 each.
3-lb. can Colima high grade coffee (each can contains China Cup and Saucer), $1 each.
Carnation Milk, large size cans, $1 per doz.; $4 per case.
Mt. Vernon or Alpine Milk, large size cans, 95c per doz.; $3.75 per case.
Extra Fancy Del Monte Brand Hawaiian Sliced Pineapple, 2½-lb. cans, 14c each; $1.65 per doz.
Ox Gall Bleaching Soap, 7 bars for 25c; box 100 bars, $3.50.

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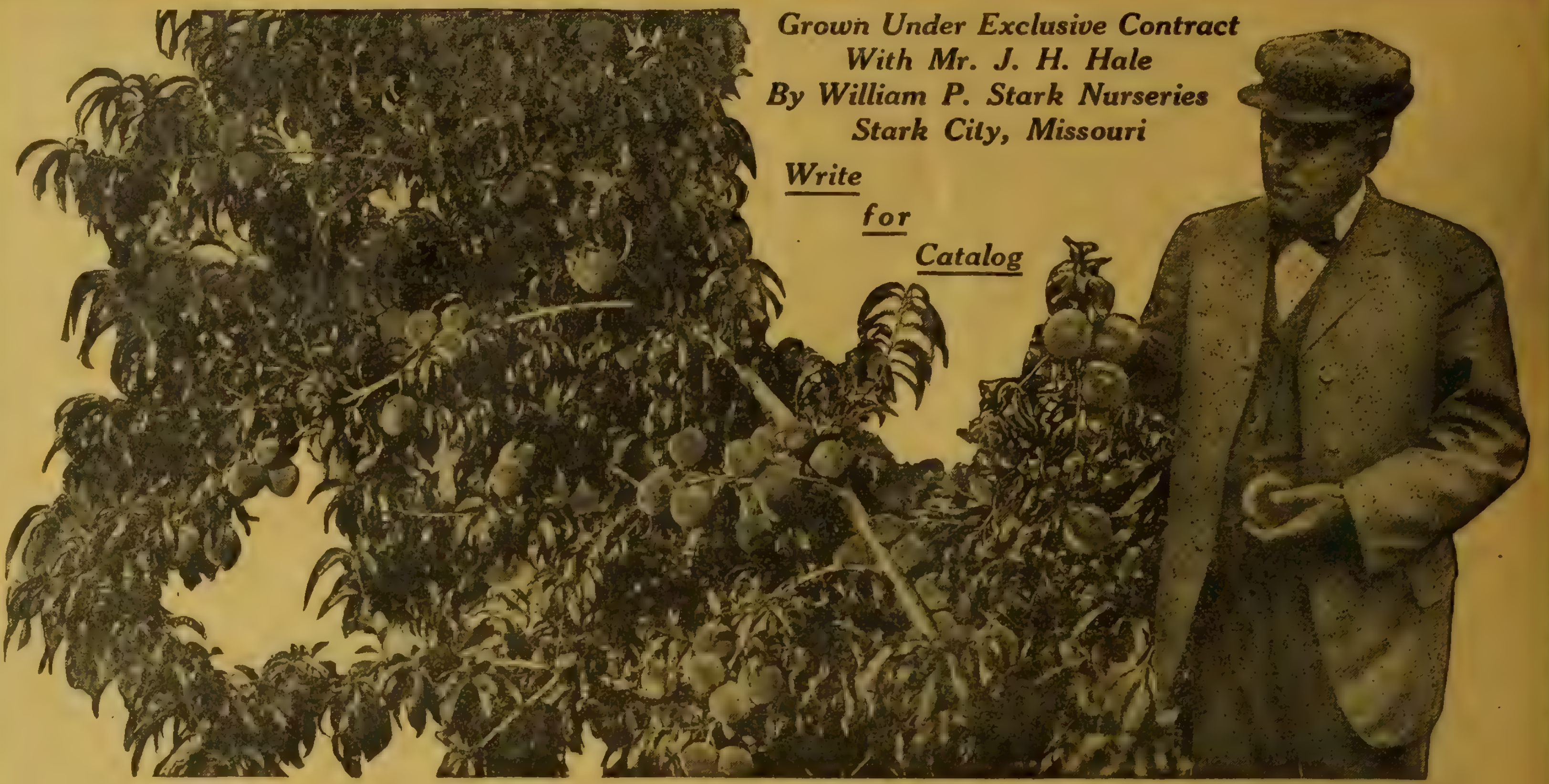

The J. H. Hale—America's Greatest Freestone Shipping Peach

Firm as a Cling, Yet Perfect Freestone. Round, Holds Shape. Unexcelled for Canning. Rich, Meaty Flesh, Weighs 12% More Than Elberta, ⅓ to ½ Larger, Ideal for Drying. Late Bloomer.

The Peach for Western Growers

Here is a peach that will ship immense distances. A peach round in form and regular in shape, that doesn't "rag out", or discolor syrup, matchless for canning. A peach of sweetness, heaviness and density of flesh admirable for drying. Study these qualities:

Size, 1-3 to 1-2 larger than Elberta
Weighs 12% more per bushel
Tight skin, *practically fuzzless*
Golden yellow color, carmine blush
Solid and firm. Won't "squash down"
Longer keeper, better shipper
Globular shape for canning
Brilliant clear syrup
Better flavor than Lemon Cling
Heavy, dense flesh for drying
Large size, cheapest to handle
Ripens early—hangs late
Late bloomer, for frosty regions

A few peaches have *some* qualities best fitted for Pacific Coast conditions. But here is a peach that embraces them *all*. Find out more about the amazing J. H. Hale. Send for the catalog. Get posted — NOW.

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Please mail me your 120-page catalog. I am interested in

☐ J. H. Hale Peach ☐ Delicious Apple

☐ Apples
☐ Peaches
☐ Pears
☐ Plums
☐ Cherries
☐ Bush Fruits
☐ Roses
☐ Ornamentals
☐ Strawberries

__________Approximate Number of trees desired.

*Name*__________

*Address*__________

What a California Expert Thinks

"The J. H. Hale is a very heavy, firm-fleshed peach—coarse fiber almost absent. Flesh solid yellow to the pit-wall, no excess of red at pit and no cavities around it. A variety that should prove of exceptional value in this state. If it persists in being as much larger than Elberta as is claimed it will be hard to hold in one hand in California."

Prof. E. J. Wickson, Dean College of Agr.
University of California

Be First In Your Section

As an orchardist looking for most profitable fruits, there is a golden opportunity for you in the J. H. Hale Peach. Read the complete story and description in our catalog. Our supply of J. H. Hale peach trees is limited. To get your trees you must *order early*. Ask about our special June-budded J. H. Hale peach trees for large planters.

Genuine Delicious Apple—Growers' Prices

You who have wanted genuine Delicious can now get them, extra size, extra grade, with the famous William P. Stark quality, direct from our nursery and at nursery prices. Write for catalog showing complete list of tested, profitable apples.

No Agents—Save 30% to 50%

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WM. JUDGE

Corona, Cal., Jan. 31, 1914.
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S. N. NELSON

Willits, Cal.
Gentlemen:
Our inspector did not open the trees, as he said he was sure all trees coming from the William P. Stark Nurseries were all O. K. He is from Missouri and has been through the William P. Stark Nurseries.
MRS. M. R. MEAD

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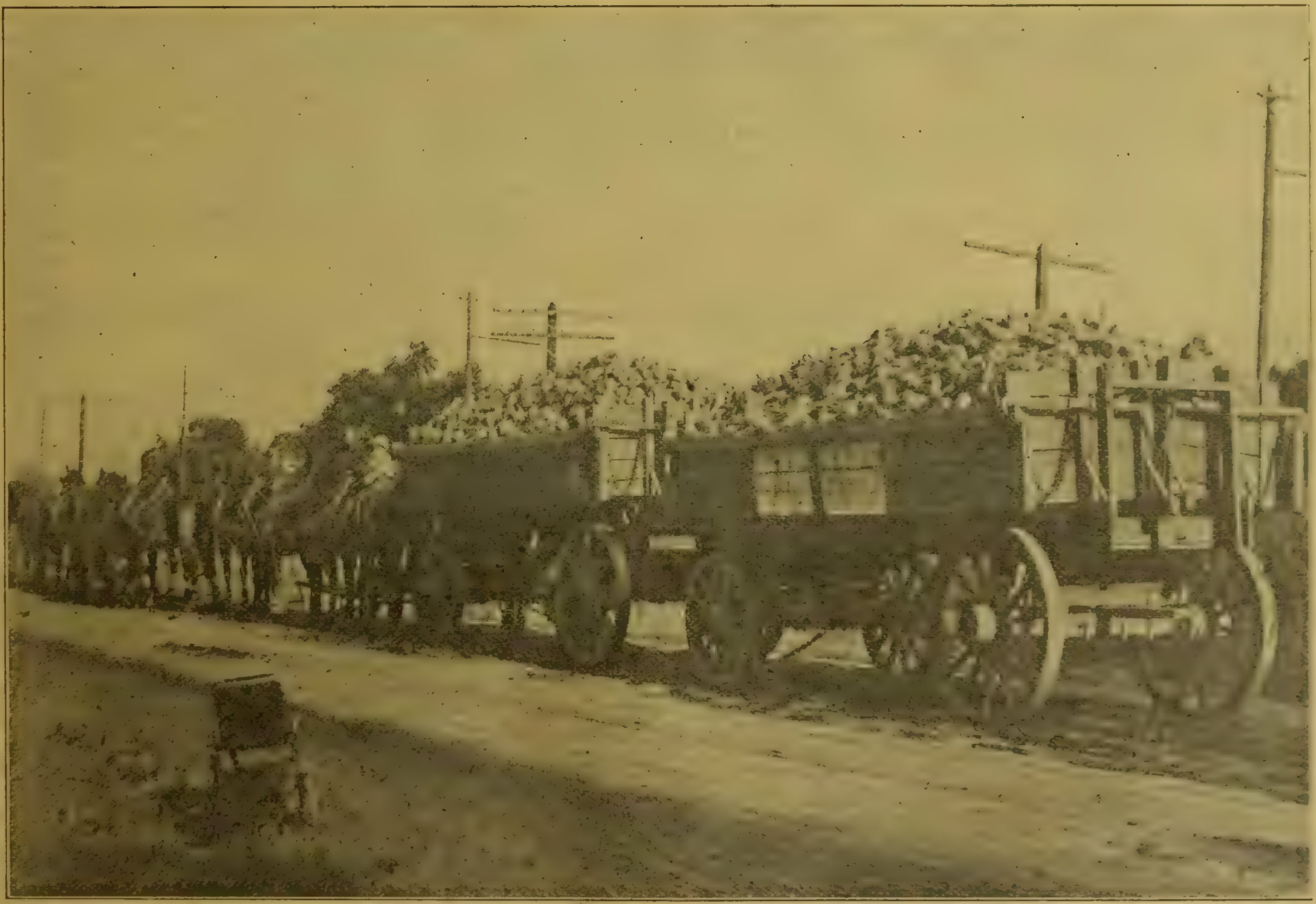
An Illustrated Weekly Magazine, Devoted to the Rural Home and Ranch

LOS ANGELES October 8, 1914 SAN FRANCISCO

San Joaquin Sugar Beets



A trailer load of sugar beets on the way to the Visalia sugar factory.

California is today producing more sugar than any state in the Union. See article on page 339 by Percy L. Edwards.

What Mr. Hospers of Los Angeles saw *in* Milford Valley

THE following letter was written by a practical farmer, Mr. P. Hospers of 3015 Budlong avenue, Los Angeles, who has just returned from a thorough investigation of Milford Valley lands. Mr. Hospers was kind enough to permit us to use this letter which was written to a friend (F. P. Gallagher) of Armour, S. D. This is a practical man's opinion of a practical farm land offering. If you are in the market for the best fruit, potato, grain and alfalfa land in the west—read this letter carefully.

Los Angeles, Cal., Sept. 28, 1914.

F. P. Gallagher,
Armour, S. D.

Dear Friend:

I want to tell you about my trip to Milford Valley, Utah, last week. I found one of the finest valleys I have ever seen, nothing like it in South Dakota, Montana, Colorado or Texas, and you know I've been all over those places, having bought and sold land there.

These Milford lands have an extra fine soil and plenty of the best water, mighty cheap, too, for this western country. It is a fine fruit, grain and stock country. Saw wheat that threshed 55 bushels to the acre; saw oats 100 bushels to the acre weighing 55 pounds to the bushel. Saw alfalfa fields that cut 3 tons to the acre and they cut it three times, so you see they got some hay, and it is of the best quality. Saw fields of potatoes that will go 500 bushels to the acre. I saw some of the finest hogs and cattle and I know that is what you like. Climate is just right, nothing like it in the middle west. A man can work outside every day here. Milford is a live town of 1500 people and has a pay roll of $50,000 a month. These lands are from two to six miles from the center of town. The railroad is the main line of the Salt Lake. You asked me several times to let you know when I found a good place. I am sure this is just what you want. You had better come at once and see. I expect to move to Milford in the spring. This land is selling very fast and I would advise you to act quick. The cost is only $30 per acre and the water right is sold at $70 per share, sold on 12 years' time, if desired. This is the cheapest land of this class I've seen out here. With best wishes, I am

Yours truly,
P. HOSPERS,
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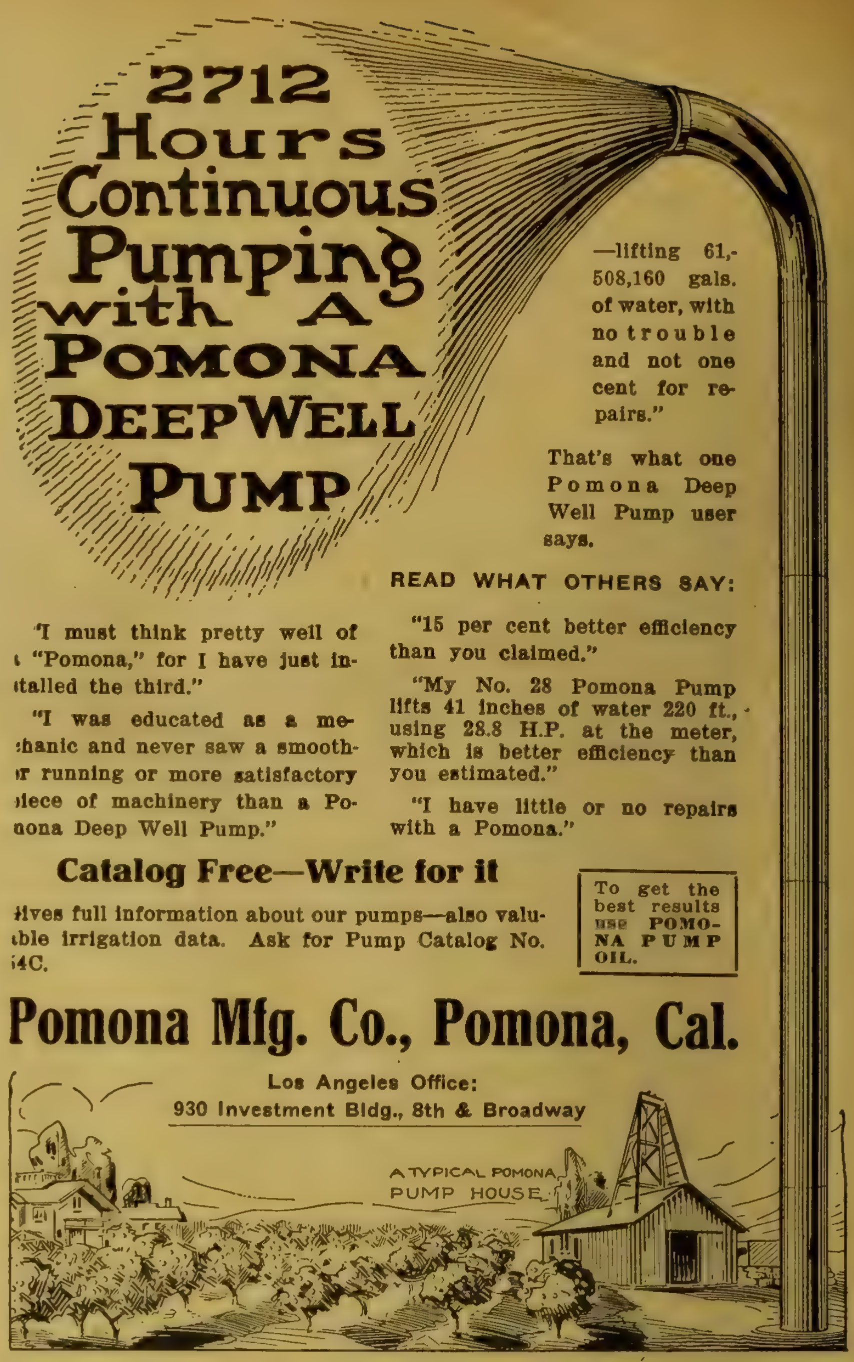
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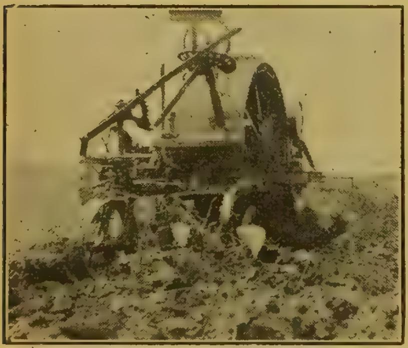

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California Cultivator

Rural Californian combined with California Cultivator

Vol. XLIII No. 15 LOS ANGELES: THURSDAY, OCTOBER 8, 1914 One Dollar Yearly

Potato Growers Convention at Stockton

Cultivator Representative Hears Discussions at Convention and Observes Potato Growing Conditions in California's Largest Potato Growing Section.

The West Coast Potato Growers' Association was born at Stockton at the meeting of the emergency potato convention, September 26. State Horticultural Commissioner Dr. A. J. Cook was elected president and William Garden, county horticultural commissioner of San Joaquin County, was elected secretary. An executive committee of five is to be appointed by the president later.

Included in the territory of the association are California, Oregon, Washington, British Columbia, Idaho, Nevada and Utah. This West Coast Association will probably affiliate with the National Potato Association, which meets in Lansing, Michigan, December 2-3, 1914, and in San Francisco in 1915.

The emergency convention was a big success both in point of interest and attendance. It was called to discuss the potato troubles which are causing difficulty in the interstate shipment of potatoes.

Stockton was selected as a meeting place because it is in the center of the largest potato-growing district in California—not because there are more kinds of diseases or more trouble from diseases than in other sections. Rhizoctonia, fusarium, tuber moth and eelworm are widespread and a general warfare must be urged against them.

Friday, September 25, was devoted to a trip through the island district on a river steamer. Over 100 made the trip. The meetings were held Friday night, Saturday morning, afternoon and evening.

Dr. J. Appel, a distinguished bacteriologist and pathologist from the University of Berlin, Germany, and Dr. J. Westerdyke of Amsterdam, Holland, a lady who is at the head of experiment station and bacteriological work in that country, were in attendance and made many valuable suggestions. Dr. W. A. Orton, plant pathologist, and William Stuart, horticulturist of the United States department of agriculture, came across the continent to take part in the discussions; State Horticultural Commissioner T. O. Morrison of Washington and E. A. Roberts, president of the State Horticultural Society of Oregon, were there, and the University of California and the state horticultural commission were well represented.

The delta region, lying between the Sacramento and San Joaquin rivers, comprises about 300,000 acres of rich peat and sediment land that has been reclaimed from overflow by a system of levees. The potato is the big money crop and has been grown most largely. Certain factors which are essential to the successful growing of potatoes everywhere in the world have been overlooked by the farmers in the delta, as they have elsewhere, with resulting troubles and decreased yields.

The lands in the Stockton district are farmed principally by tenants who have no interest in the future of the land or a permanent agriculture. It was urged by Col. J. P. Irish that owners bring about the better farming methods necessary for successful potato growing, not only here, but anywhere.

The discussion of the problem naturally classified itself under the following heads: Soil and rotation, irrigation, seed selection and inspection, storage of seed, and diseases, and these subjects will be taken up in their order.

Soil and Rotation

A rotation of crops is imperative for the growing of potatoes continuously, and this rotation is best if it is one that requires livestock to utilize a part of the crops and furnish animal manure for fertilizer. Just what rotation is best for any locality, and for the delta in particular, is a problem that must be worked out. The government and state have an experiment station at Middle River, in charge of W. V. Shear, assistant horticulturist, United States department of agriculture, at which this and other problems are having attention. When first reclaimed these light peat lands, the product of decayed tule and other water plants, are frequently sour, and are very light and open. It is the custom in this country to plant potatoes the first three years, then to rotate with barley until yields are greatly reduced. It was pointed out by Dr. J. Westerdyke that in Holland the land is first cropped in oats, clovers and various grasses, and often pastured for three or four years before it is considered that it is in fit condition for potatoes. During this period lime at the rate of one ton or more to the acre is applied to correct acidity. Then the potato crop is grown once in three or four years in rotation with grasses and other vegetables. Commercial fertilizers are applied freely to potato lands in Europe.

Irrigation

A constant supply of good water during the entire growing season is essential to the growth of the potato. In the delta peat lands that are very wet in winter, ample irrigation in summer is quite as important as anywhere else. It was pointed out by experts and growers that where water takes up vegetable matter and other impurities readily it is important to provide ditches that will permit such

(Continued on Page 347.)

Sugar Beet Culture

Percy L. Edwards Writes for Cultivator Readers as to Cultural Practice With Sugar Beets in California

The farmers of Tulare County in the San Joaquin Valley are demonstrating that sugar beets may be produced in paying quantity in this great valley beyond the influence of the sea breeze. In the Live Oak section about Visalia the best results have been obtained so far. Early planting of seed is found to be of vital importance in insuring a good crop. The natural rainfall must be depended upon to produce the crop in this section until some system of irrigation, other than flooding, is devised. Flooding fields of growing beets is at best risky and many fields have been practically ruined in this way. As yet the growing of sugar beets in the San Joaquin Valley has not passed beyond the experimental stage.

So far as the writer is aware no organized effort has been made to determine the question of sugar beets being a paying crop in this valley, except at Visalia and the Tulare Lake district. At Corcoran several years ago a very good beet sugar mill with a capacity of 600 tons was erected. This mill has never had a fair trial. It has been tied up in a legal controversy and remains inactive. The Visalia plant is a 300-ton mill. That is, it requires that amount of beets to feed the mill every 24 hours. For several years past the Visalia mill has remained idle on account of being mixed up in the affairs of the Corcoran concern. Last year a new company took over the plant and asked the farmers to cooperate with them in the effort to make the production of beet sugar a profitable industry to both farmer and manufacturer.

The Visalia factory has just completed its campaign, producing about 20,000 sacks of fine granulated sugar. Ten thousand tons of beets were sliced to produce this result. A large amount of crude molasses is in storage to be sold later on to manufacturers of stock foods.

These figures of the sugar plants' operation are perhaps of little interest and importance beside the figures showing what the farmers of this section did to produce this result. It is well known that Tulare County ranks very high as a deciduous fruit section of California, as well as citrus. The writer found in some instances farmers raising a crop of sugar beets between the young trees of their peach, prune and plum orchards. They were giving their young trees splendid cultivation and at the same time producing a good crop. J. N. Enlow has grown a crop of beets for a number of years past and always between his young trees. The past season he harvested 11 tons per acre and received from the factory after factory deductions, $42.50 per acre.

Edward Brecht is cultivating a young orchard of prunes. This orchard, together with some other land, making about 20 acres, was seeded to sugar beets this season. The tally at the factory showed a credit for Mr. Brecht of nearly 250 tons. On 16 acres of young orchard, R. K. Ogden harvested 171 tons. The average price paid to growers this year may be placed at $5 per ton. In any figuring of profits in the above cases it should be kept in mind that the growers used the beet crop as a secondary crop and cultivated and prepared the land themselves.

On about 60 acres of land in this same district, T. J. Murray of Visalia, harvested nearly 1000 tons of beets. Some of his land produced over 20 tons to the acre. He flooded his land thoroughly before plowing last spring. Indeed, it would seem from the condition of the beets when harvested and tested at the factory that probably there was an excess of moisture in this land which was well supplied from irrigation ditches. Where there is seepage from these open ditches there is apt to be too much moisture at a time when the beet root is maturing and taking on sugar. In consequence the beet is kept growing instead of ripening.

The firm of Riggs and Oldermeyer engaged quite extensively in sugar beet raising the past year. One field of 50 acres near Visalia produced 705 tons of very fine beets. Ten dollars an acre was paid for the use of the land. On what is known as the Bliss ranch, six miles south of Visalia, this same company harvested a paying crop from a very large acreage.

One lesson was learned by the beet growers of this part of the state which they will do well to heed. There must be early planting of seed to insure the maturity of the roots before the hot days of June and July. Some losses were suffered this year on that account. If the drouth is abnormal the beet roots are shriveled in the burning sun. December is none to early for beet seed planting in this section and planting should be all done with the month of February.

To produce an acre of beets will cost, depending on conditions surrounding the particular case, from $28 to $40 an acre, in some cases a little more. But in the section of which we are speaking, where operations are carried on in young orchards, the cost account is discounted by the benefit to the orchard.

The sugar beet sections of California are found in the old grain fields of the state. While grains are still produced on these lands in certain sections growers are coming to realize the fact that grain crops are no longer profitable, because of reduced yield. Sugar beets and beans are crops of a later day and more profitable to the grower. Beans are a rival for favor of the grower. The little expense of growing beans as compared with sugar beets has made this crop a strong rival. But while the figures show that the cost of producing a crop of beans is under $10 per acre, the value of this crop per acre on the average is not much over $40. To be sure, on some of the rich soils of Ventura and Orange Counties much larger yields are produced some seasons. If a comparison is made with grain production, wheat, barley and oats, the difference in favor of the sugar beet crop will be

(Continued on Page 347.)

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GREY FUNGUS GUMMOSIS OF LEMON TREES

Written for California Cultivator

By H. S. Fawcett

In the California Cultivator for August 6, 1914, the writer took up some questions in regard to the brown rot gummosis, the one which may start either on lemon or orange trees (more often on lemon) near the soil and which kills the bark rapidly clear through to the wood on trees of all ages. The remedy for this brown rot form was to cut out the diseased bark and treat the wound and entire trunk with Bordeaux paste. In this article, the writer will attempt to answer questions that have come up in regard to another form of gummosis which is found almost entirely on the bark of lemon trees older than ten years, and never as far as known on orange bark. This and the brown rot form of gummosis were described and illustrated by the writer in the Monthly Bulletin of the state commission of horticulture, volume 2, page 601, August, 1913. This second form of gummosis has been found to be due to a fungus known in the packing houses as the grey fungus, grey mold or Botrytis. There is still another form of gum disease, the scaly bark of orange trees, questions about which will be taken up later. The grey fungus (Botrytis) gummosis occurs on thick bark on lemon trees only and usually in the coast regions. It differs from the brown rot gummosis in killing the outer part of the bark on these older lemon trees much in advance of the inner. The writer has never seen it on trees younger than ten years old. An area of bark, usually small, will be found killed through to the wood, but surroundng this a much larger area where the outer bark has been killed and the inner bark is still alive. The problem in this case is to save as much bark as possible and yet get out the bark that is killed to the wood and prevent any further bark from being entirely killed.

At the Limoneira ranch, where this form is common on older trees, the areas that are dead to the wood are cut out, but beyond this outer diseased bark only is scraped off, leaving the inner bark attached. The outer bark is scraped off with a tool made by curving one end of a piece of steel about the shape of a large flat file to a semicircle, sharpening one edge and setting it about two and one-half inches from one end of a ten inch handle at an angle of 60 degrees. (See illustration in Monthly Bulletin, state commission of horticulture, August, 1913.) Then the cut-out and scraped area as well as the entire trunk is painted with the Bordeaux paste, the formula and instructions for making which were given in the California Cultivator for August 6. The grey fungus gummosis and the brown rot gummosis may often occur together in the same grove or on the same tree. The scraped bark will crack, and gum will usually ooze out for some weeks after treatment. This is to be expected and need cause no alarm if the inner bark at the edges dies no further.

Then there is a cracking and loosening of the bark on old lemon trees that either accompanies or is independent of gum disease. This usually first appears on lemon trees about 15 to 20 years old or older. The Eureka variety seems to show it earlier than the Lisbon. It is not yet known certainly whether this is a condition through which old Eureka lemon trees naturally pass or whether a fungus which attacks the outer bark may be a causal agent. When the bark is first cracking and loosening, the tree usually appears "out of condition." The old cracked bark helps to encourage gum disease, especialy the Botrytis form. If any of the gum diseases are found in connection with it, I would suggest scraping off as much of this old cracked and loosened outer bark as possible and painting the trunk with the Bordeaux paste or a strong solution of lime sulphur.

PSOROSIS OR SCALY BARK OF ORANGE TREES

Written for California Cultivator

By H. S. Fawcett

This is a bark disease on the trunk or larger limbs of orange and pomelo trees. I have never seen it on lemon trees. There is, however, a cracking and loosening of bark in long strips on old lemon trees that is evidently different. This was mentioned under grey fungus gummosis.

Scaly bark manifests itself by the outer bark being broken into scales and pushed up over areas varying in size from an inch to a foot or more in diameter. It begins in a very small area in which simply the outer bark dies, hardens and is pushed off apparently by the formation of new tissue underneath. This, for convenience, may be called the first stage. This goes on from year to year, sometimes very slowly, only an inch or so each year, for several years before an area of any importance is formed. If detected at this first stage it may be easily stopped. Experiments have shown conclusively that these beginning areas can be cured successfully by cutting out all affected bark and treating the wounds with Bordeaux paste, lime-sulphur solution, or good fungicides that are not injurious to bark tissue. As these small areas slowly enlarge from year to year they spread entirely around the trunk or limbs and considerable gum begins to form. New bark constantly forms underneath as the old is cracked off. This last may be known as the second stage of the disease. It is usually in this condition, or even in the third stage, described further on, before the

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grower's attention is first called to it by some slight effect on the foliage. All the bark on affected areas that have been allowed to go so far as this second stage cannot well be cut out, since to cut out all affected bark would result in girdling the trunk or limb so affected and cause its death. Some good, however, may be obtained by treatment. If the wood underneath is not yet dead the disease may be checked, but not certainly cured the first year, by scraping off or rubbing off the loosened cracked bark and painting the areas with Bordeaux paste. (See article in California Cultivator for August 6 for formulae and details as to making Bordeaux paste). The experiments so far carried out with Bordeaux paste at this stage of the disease show that when the dead bark is carefully scraped off the disease has been materially checked, even where the bark was affected clear around the trunk or larger limbs. The smaller affected limbs should be cut out at all stages. The results appear to vary with the care used in treating the areas. As in the case of the other gum diseases, considerable gum, even more than before treatment, may ooze out for some weeks after treatment. This is what happened in our experiments, and is to be expected. This gum need not cause any alarm. It will finally stop, harden and be dissolved away by the fall rains. The beneficial results are to be looked for the following summer.

If the disease has gone to the third stage, or so far that the wood underneath is beginning to die, there is, as a rule, no practical remedy, except to look toward taking out the limb or the tree so affected after the fruit is picked. If limbs in the second or third stage of the disease are badly affected and the trunk healthy, the limbs may be cut out and the trunk treated. If the trunk is in the first or second stage of the disease, it may be practical to treat it; if in the third stage, where the wood inside is dead for some distance, it will probably be best to look toward taking it out. It is well to bear in mind that the scaly bark disease is active, as a rule, only in the late spring, summer and early fall, and that it seems to stop and be inactive in late fall and winter. No matter what you do (even if you do nothing) the disease appears to be cured in the dormant period of late fall and winter. Any remedy, therefore, that is used must stand the test of a year and a half before any definite claim may be made for it. I would suggest that growers beware of any cure or remedy for scaly bark that is supposed to cure it in a few months' time. This few months is just long enough to bring the disease to a standstill in the fall and winter. Any remedy must stand the test of a summer following the year in which the treatment is made. For example, if an unknown treatment is made in June, 1914, one cannot surely pronounce on the value of the treatment until, say, September or October of 1915.

Briefly stated, psorosis or scaly bark of orange trees, in its development, may be said to have three stages:

1. The beginning areas, where a patch of outer bark is cracking up and is being pushed off in scales by the growth of new bark underneath.
2. The enlargement and spread of this first stage, until the areas surround the trunk or limbs without yet killing any wood.
3. A further development of the second stage, until patches of bark are killed through and the wood cells begin to die. This stage may require from five to ten years' time from the appearance of the first stage.

The first stage may be cured by cutting out affected bark and treating with a fungicide, as described above. The second stage, if on the trunk or largest limbs, may be checked and possibly cured by scraping off dead bark and treating. As far as known to the writer, the saw and the fire are the only sure final remedies for the third stage. Since the disease is so slow in its progress and its spread, advancing only a few inches each year and may be five or ten years in a tree before doing evident damage, one or two thorough tree-to-tree inspections of an orange grove each year would be sufficient to detect most cases in the first stage, when they are easily cured.

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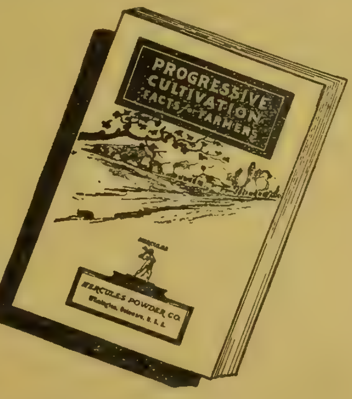

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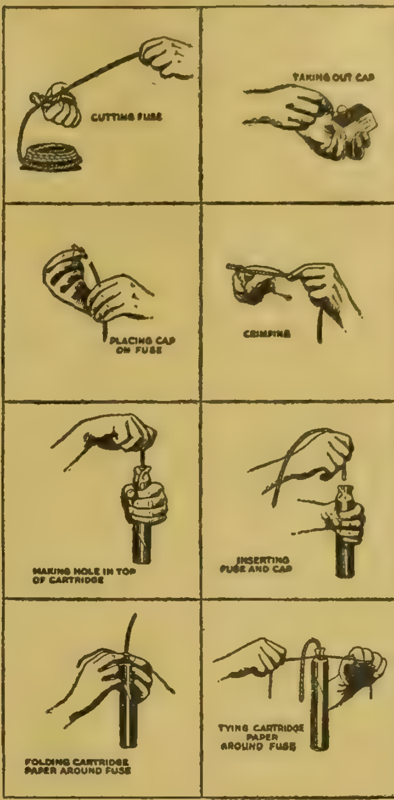
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How to Prime a Dynamite Cartridge

"Priming" is the inserting of the detonator, whether blasting cap or electric fuse, into the cartridge. When cap and fuse are used, it is first necessary to attach the cap to the fuse.

The fuse should be cut into lengths long enough to reach from the charge when loaded in the hole to at least three or four inches above the surface. One cap is then taken from the cap box by covering all of them, except one, with the box lid or with the hand and allowing the loose one to slip gently into the free hand. Do not try to pick caps out of the box with tweezers, nails, or any hard substances as they are likely to be accidentally exploded. Slip the cap carefully over the end of the fuse, taking care not to push the fuse very hard against the explosive charge loaded in the bottom of the cap and do not twist the cap on the fuse. When the fuse is pushed to the bottom of the cap, make a crimp not more than ¼ inch from the open end of the cap by using a Hercules cap crimper. A glance at the illustration shows you how this is done.

There are two accepted methods of priming dynamite—placing the detonator in the end or in the side of the cartridge. The former is the better way.

When priming in the end, the paper is folded back at one end of the cartridge and a hole made with a wooden punch about the size of a lead pencil or with the straight handle of the crimper into the exposed dynamite. The cap with fuse attached is inserted into this hole and the paper drawn together and tied tightly. The cartridge is then ready for use.

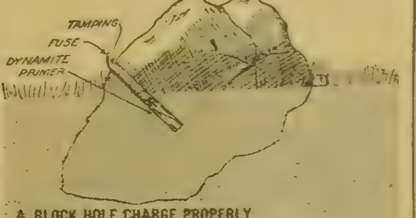
Dynamite Removes Rocks Cheaply and Quickly.

There is but one best way to do anything. The best way to remove rocks or boulders from a field that is to be cultivated is by the use of of Hercules Dynamite. As a matter of fact it is, in many instances, the only way.

There are three accepted methods for rock blasting. It may be done by means of a block hole, a snake hole, or by mud-capping. The first is illustrated here. It is a slower method than either of the other two and is only necessary in cases of very large rocks or boulders.

When it is used, the charge is exploded near the center of the rock, as the illustration shows. When Hercules Dynamite is properly used the rock always goes, no matter what its size.

The other two methods of rock blasting are described in "Progressive Cultivation." Write for your copy.



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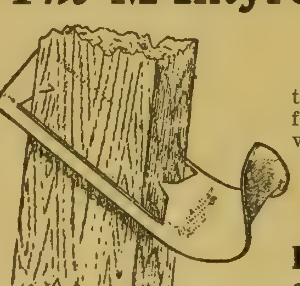

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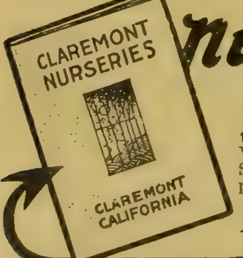

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California Apple Shov

Watsonville Apple Show Given Larger Scope and Moved Bodily to San Francisco. Great Exhibit Witnessed by Immense Crowds.

Written for the California Cultivator by its San Francisco Representative

Apples to right of us,
Apples to left of us,
In figures and boxes,
Stood all around us.

Ours not to eat of them,
Ours not to taste of them,
Ours but to look at them,
Only to praise them.

In all the dignity of an exposition, combined with exhibits from an educational institution and the best in art and beauty, the California Apple Show brought to the people of San Francisco in wonderful splendor a display of the realities and profits of the apple industry. It was a display the like of which this city had never seen. Its people had read of the shows in distant places and had fondly hoped to go some time, but here was the thing itself, even greater than the description had portrayed.

We have looked on many an apple show, but never such a one as this. It was one to make us leave all thoughts of former exhibits behind and to revel in the contemplation of the magnificence of the productions which are evidence of tremendous energy and ingenuity. We know that Watsonville has spent months of thoughtful preparation for this exhibit and she deserves due praise for the clever conceptions and the artistic way in which they are worked out.

It would be hard to conceive a greater stroke of business wisdom than is displayed in bringing to the people of a great city the show that has made Watsonville famous wherever apples are eaten. Heretofore hundreds of people have gone to Watsonville to see the show, but in San Francisco thousands have seen it, and have taken away with them a wonderful picture. It is the contrast between hundreds and thousands. It gives the man in the office a chance to see a little of the possibilities of country life. It inspires enthusiasm among those who are seeking a ranch, and it gives to the housewife a chance to see in carloads and in figures the things that she sees at home only by the dozen.

And San Francisco appreciated the honor of the occasion. From the Ferry building to the tents, a distance of nearly two miles through the heart of the city, festoons of flags pointed the way to the novel show. In every window was the announcement that the show was on. San Francisco took occasion to welcome this exhibit and to give praise in unstinted measure, for she is lavish with her good cheer and best wishes.

We knew it would be good, for the California Apple Show is always good, but we did not look for the varied array of figures, the display of apples in carload lots nor the feature exhibits which were everywhere in evidence.

The old water wheel had its true presentation in apples. It reminded us of the wheel by the mill with its constant murmur of dropping water. It recalled the boyhood days at the old pond, where we forgot the chores of the day and disported ourselves ca[illegible] free and fearless. The Panama-Pacific seal, done in dried apples, was a w[illegible] of art upon which any apple sculpt[illegible] may look with pride. The auditorium, where former apple shows have been held, was done in glasses of apple jelly. The Dutch windmill, always quaint in reality, found its counterpart in apples. It was complete in every detail, and stood as if ready to respond to every gust of wind. A[illegible] there was the elephant and the [illegible] We have become so accustomed to these figures that to be without the menagerie would have been a fatal error.

Perhaps the most unique display was the millinery work. There were the season's styles done to the queen[illegible] taste in dried apples. Gracefully festooned were ribbons, surmounted with feathers and stick-ups galore. This was a truly ingenious display, and o worthy of preservation—if it were p sible. Uncle Samuel was there wi his postoffice, giving object lessons the art of sending apples by parc post. There were many other f tures, such as houses, fanciful desig and elaborate decorations. The ent display in the main tent was s rounded by great vases, in whi vari-colored flowers added an inten beauty to the scene.

Utility features were grouped themselves in an adjoining tent, a the interest shown by the visit there was no less than in the ma tent. Manufacturers vie with ea other in showing to best advanta and exhibitions of this kind offer opportunity of showing their produ in very effective manner.

The American Can Company show a complete assortment of cans— sizes, shapes and kinds. They a had a good display of several differe makes of orchard heaters. The R wood Manufacturers' Company, of S Francisco, showed a full size silo, gether with water pipe made of r wood and wound with wire. This hibit was particularly complete and liberal proportions. The Yuba C struction Company was on hand w one of its small caterpillar tracto and the crowds which viewed showed that there is a growing terest in tractor power on the fa The California Rex Spray Compa gave a very creditable showing of sprays, giving an idea of the util of its production. The Bean Sp Pump Company had a complete spr ing outfit, with gas engine. The play of the C. C. Morse Company w particularly complete. It contained assortment of plants and seeds a presented a delightful contrast to mechanical exhibits.

We must not forget the Teddy bea the dollies, and the candy and p corn men. They were there a-plen The playground for the children w well patronized. On the whole manufacturers' tent was a worthy p of the show. It has always been part of similar exhibits, but we th that the selection of exhibits and general arrangement was the best have seen. There was absolute fr dom from anything to which one co take exception. It was clean and structive in every way.

This show did much for Wats ville, and it did much for the state. carried an advertising value wh cannot be overestimated, for the p ple came, they saw and were c quered by the tremendous possibilit of the apple industry. Similar exhi tions will do well to bear in mind t it is more profitable to bring the sh to the people than to expect the peo to travel to the show.

WHAT IS YOUR VERDICT?

By J. E. Gilligan, President Sa Quentin Agricultural Club

A scarcity of farm laborers just the season when they are absolut indispensable to the farmer rec each succeeding year and often cau the farmer much anxiety.

This lack of dependable help is so pronounced in California, perha as in some of the Middle West states, but it nevertheless assun sufficient importance to merit so consideration. In Kansas, Nebras Iowa, Missouri and Oklahoma it is unusual thing for the farmers to dr to the nearest railroad station to m freight trains in the hope of induc some of the hoboes and tramps, w are touring the country in side-d Pullmans, to help them out. Not frequently the services of a consta are requisitioned to persuade th victims of the wanderlust to accep [illegible] the alternative of 90 days [illegible] gang.

[illegible] new source of supply is be provided which may or may not m the requirements, according to the itude the farmers take on the nature f this source.

The division of agricultural educa-ion at the University of California as established classes in all subjects f agriculture and animal husbandry in the state prisons at San Quentin and Folsom, and is giving the students in these institutions the benefit of their extension courses. An understanding between Dean Hunt of the Berkeley experiment station and the wardens of these institutions has resulted in the voluntary enrollment of approximately 10 per cent of the inmates as students of agricultural pursuits.

Not less than 1500 men are being annually discharged or paroled from these institutions, which means that 150 men, who have acquired a theoretical knowledge of some of the agricultural pursuits, are available each year for work on the farms. Most of these men will have had such practical experience as the limited acreage of the prison reserves will permit.

The university farm school at Davis is less than 30 miles from Folsom, while the walls of old San Quentin frown from the northern shore of the bay directly opposite Berkeley; thus each institution is conveniently located and admits of frequent visits from the professors of each place.

Though this movement is yet in its infancy, the results thus far obtained are so gratifying that other states are preparing to follow the lead of California. Progressive thinkers are establishing many new precedents in the methods of handling malefactors, and it is altogether probable that within a year every state in the Union will have stepped into line, giving the inmates of their institutions the benefits of extension courses of their agricultural colleges. Should the percentage of prisoners who avail themselves of this privilege in other states be in proportion to those of California's prisons, it would mean that approximately 5000 men would be added annually to the available help for the farmer in time of need.

It is true that a great number of undesirables are to be found among the inmates of the penal institutions of the different states, but these are not among the numbers who voluntarily take up the study of agriculture, under any conditions. The time is already at hand when a higher standard of intelligence is required to render, even a helper in the field, profitable and efficient, than has obtained in the past, and while the number of farm laborers who are profiting by the liberal policy of the state agricultural colleges for acquiring technical knowledge is materially increasing, it is yet and must continue for some time to be totally inadequate to meet the demands. A recommendation from the prison officials as to moral fitness and a testimonial from agricultural colleges as to efficiency should render a paroled or discharged prisoner a more desirable employe than the flotsam and jetsam of the unskilled laborers on whom the farmer is forced to depend in time of need.

A further development of this movement must depend on the attitude taken by those who can enable the students from these institutions to find a market for the knowledge and skill thus acquired. The average farmer is too much occupied with his own affairs to give heed to such economic questions as prison reform, and too phlegmatic by nature to admit of maudlin sentimentality prejudicing his judgment in passing on a question of this kind; it is therefore reasonable to suppose that it will merely present itself to him as a business proposition and his verdict will be consistent with his own personal interest.

For the man whose career of lawlessness has been temporarily checked by the law, it means an opportunity to start anew among scenes and associates that will insure clean living, clean thinking and a clean conscience.

In conjunction with the routine class work, the students have organized an agricultural club, the primary object of which is to get in touch with organizations in rural districts with a view to mutual exchange of ideas and establishment of a fellowship which will enable us to secure employment for club members as the occasion requires.

The concrete question with which we have to deal for the present, however, is, "Will the agriculturists of this state look with favor on the efforts of the inmates of these institutions to qualify themselves for efficient service in the fields?" We recognize the futility of further effort unless we can find a market for the knowledge thus acquired.

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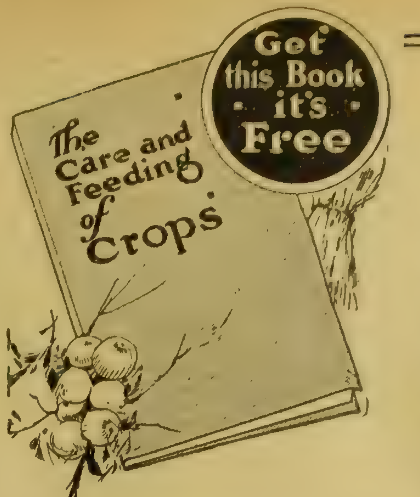
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Soil Fertility

"Soil fertility governs the value of the acreage. It costs just as much to produce a small crop as it does to raise a large one, and the value of the land is very largely determined by the income, or rate of interest on the investment which it will produce.

"Run-down, exhausted land that will produce at best a quarter crop is worth far less than one-quarter of its original value. For agricultural purposes it is dear at any price when you consider the income which would be produced by the same amount of time, money and energy expended on properly cared for fertile soil.

"There is no excuse for allowing a soil to become unproductive. Science has long since found the cause and the remedy.

Maintaining and increasing the fertility simply means replacing some of the nitrogen, phosphoric acid and potash which have been manufactured into crops and sold off the land."

This is a quotation from our book, "The Care and Feeding of Crops," a handy compendium with most valuable information for every grower. If you haven't a copy you should send for one at once. The information contained in it is so valuable that it may be the means of changing failure or moderate success in growing or farming to pronounced success. It has done so for others.

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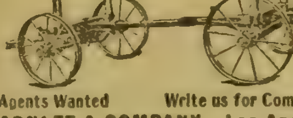

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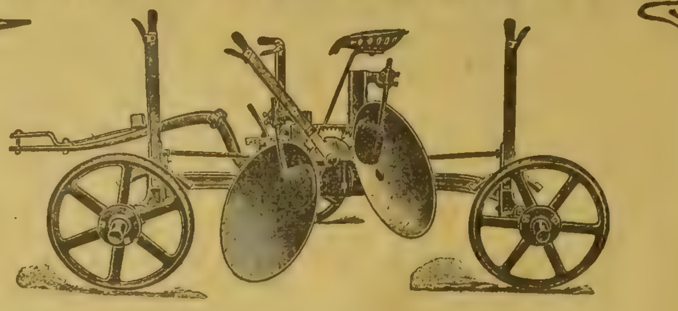

THIS is the only reversible disc plow which does not use segments to fix the position of the disc, and is therefore the only one which will always plow the same width of furrow both ways on level land and hillsides—**and stick to the work on hillsides.**

It leaves no water furrows. Discs are fixed in exactly the same working position every time the plow is lowered. Two discs wear twice as long as one—but cost you no more.

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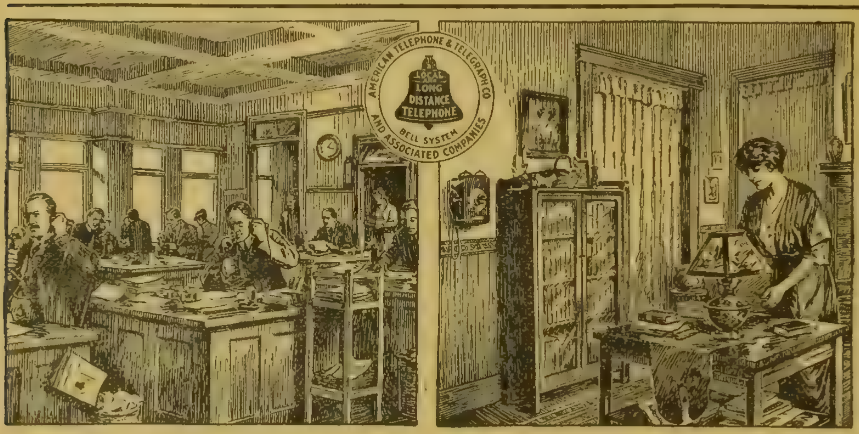

Fair Play in Telephone Rates

IT is human nature to resent paying more than any one else and to demand cheap telephone service regardless of the cost of providing it.

But service at a uniform rate wouldn't be cheap.

It would simply mean that those making a few calls a day were paying for the service of the merchant or corporation handling hundreds of calls.

That wouldn't be fair, would it? No more so than that you should pay the same charge for a quart of milk as another pays for a gallon.

To be of the greatest usefulness, the telephone should reach every home, office and business place. To put it there, rates must be so graded that every person may have the kind of service he requires, at a rate he can easily afford.

Abroad, uniform rates have been tried by the government-owned systems and have so restricted the use of the telephone that it is of small value.

The great majority of Bell subscribers actually pay less than the average rate. There are a few who use the telephone in their business for their profit who pay according to their use, establishing an average rate higher than that paid by the majority of the subscribers.

To make a uniform rate would be increasing the price to the many for the benefit of the few.

All may have the service they require, at a price which is fair and reasonable for the use each makes of the telephone.

These are reasons why the United States has the cheapest and most efficient service and the largest number of telephones in the world.

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AND ASSOCIATED COMPANIES

One Policy ***One System*** ***Universal Service***

When writing advertisers, mention The Cultivator.

The Lawn and Flower Garden

PLANTING NOTES

Written for the California Cultivator
By Ernest Braunton.

Poison sumac, better known as poison oak, is of the same family as the pepper tree. When it grows in the open as a shrub of four or six feet it somewhat resembles scrub oak, but when it climbs trees it is called poison ivy. In northern Iowa, where a large part of my boyhood days were spent, we called it three-leaved ivy, knowing it was poisonous and presuming that all ivies were, though the plant is not related to the ivies, but a true sumac. (Rhus.)

Our California species is not always three-lobed in its foliage and has been appropriately named Rhus diversiloba. It is curious and interesting among poisonous plants, for while it is a most dangerous plant for many, others are seemingly immune from its effects, and I am happy to state I belong to the latter class. In Amador County I once encountered several acres closely covered with poison sumac about four feet high. Seeing no way around it and a good cattle path through, I hoisted my little boy up on my head and waded through and no subsequent ill effects were noticeable.

Strange it is that humans may handle oleanders, getting the juice over hands and arms and no harm results, while cattle, horses, mules and even the hardy burro are killed through eating the leaves. The same is true of the English yew and many other plants. On the other hand cattle and horses eat of the leaves of poison sumac with no bad effects, bees are unaffected, and honey made from the blossoms is as good as that from the average flower. Yet some people are so easily affected by it that a ramble along a hill path where none is encountered results in such severe cases of poisoning as to place one's life in danger. One such case I knew this summer, where the patient was under a doctor's care for six weeks. On the next ranch a man was grubbing out poison sumac for the whole six weeks, without other protection than a pair of gloves on his hands and not the slightest harm came to him.

Had I any of this plant on a ranch I should quickly get rid of every plant if only from a humanitarian standpoint. The digging out should be done during late autumn, just before the rains come or even immediately after the first rain, but before new growth has started. The plants are then past the blossoming stage and sap flow is slight and sluggish, the plant being as nearly dormant as it ever becomes and therefore comparatively safe to handle.

The poisonous properties lie in a non-volatile oil which is found in every part of the plant and present in the dead wood even after months of drying. While the oil is insoluble in water, a washing of exposed parts with hot water and strong laundry soap will remove the oil so that in many cases no harm will ensue. Sugar of lead and alcohol (applied externally, of course) will destroy the poison but if affected over a large area, this remedy may not be used without danger, as it is of itself very poisonous. A solution of permanganate of potash is used by many, and lime water or a solution of baking soda will destroy the poisonous properties for others. Even sliced onions rubbed well into the itching parts have been known to effect a cure.

The United States department of agriculture recommends the following solution, to be dabbed on the affected parts several times a day. Bottles containing this remedy should be properly labeled and kept from children as the solution is poisonous: Carbolic acid, two grams; resorcin, two grams; bismuth subgallate, four grams; equal parts water and lim water to make 250 c.c.

Plant Poppies Early

There is no cheaper, more effectiv or more appropriate way of beautifying private or public grounds, roadsides, parkways, railway embankments, vacant lots, etc., than in th free use of seeds of the native Califo nia poppy. The cost of seeds in bul (by the pound) is low;; every see will grow and make a large bush plant covered with beautiful flower Being the floral emblem of our stat and known the world over as "Cal fornia Poppy," it is most appropriat to plant, and our first time visitors, a well as the experienced winter tourist, will be delighted with a gran display of these flowers. Quite incidentally it may please and satisf ourselves, and I doubt not but thi should properly be the fundamenta consideration.

Ban on Trees

County Forester Grant of Sant Ana will plant no pepper trees i Orange County for the reason tha they prove such hospitable hosts fo black scale. The camphor tree, because of red scale, will receive th same passing notice. I do not in an wise blame him for this policy, muc as I love both these excellent trees There are so many other good tree for highway planting that it ma prove a pleasant change from inlan regions where pepper trees are ver common; in fact, the dominant tre

This policy recalls a good laugh a the expense of our Orange Count neighbors. Some years ago a meeting was held in the Los Angele Chamber of Commerce, Governor Pa dee and President Wheeler of the U of C., being present, to present site for a pathological laboratory and ci rus experiment station. An Orang County resident stated that the path logical station should be placed in hi county as it contained more insec pests and plant diseases than an other part of Southern California.

Now, it is well known that scal pests and fungi are most common i coastal regions and low altitude While in Orange County the fact tha the pepper tree is a host plant fo black scale is a fundamental conside ation, at Riverside and Redland where this scale will scarcely su

(Continued on Page 359.)

Bulbs

For fall and winter planting; also Flowe Seeds for fall sowing. New Catalogu now ready, mailed free upon applicatio

NOW IS THE TIME TO SOW

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are already here, and the size and quality is even better than usual.

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Fresno District Fair

Greatest Attendance Ever. Fine Showing of Live Stock and Babies.

Fresno surprised herself and the ntire San Joaquin Valley by the immense attendance at her Eighth Annual District Fair. Twenty thousand people passed through the gates on the ast day, and the attendance on the other days ran in the neighborhood of 2,000, or above. Saturday's attendance was said to be the largest gathering of people ever in the San Joaquin Valley. This means that the fair was a complete success financially, but more gratifying to the people of that section was the fact that it proved a successful effort to hold a for-sure agricultural fair to demonstrate the possibilities of the San Joaquin valley.

Of course, there were the usual side attractions, which aided in lending a holiday appearance to the fair. In addition to fat steers and big pumpkins, there were baby shows, milking contests, school contests, stock-judging contests, attractive booths of business houses and, to cap it all, an afternoon live stock parade passed in front of the grand stand. Regarding this parade the Republican said:

"The parade was held in this manner that the people might see the stock without having to stand in the dust and to insure a good attendance. Not in the history of the state has a stock parade been held in the afternoon on the race track that the people might see it with ease. Secretary Eberhart said yesterday that the plan had worked well, if compliments made to various fair officials meant anything.

"The parade was led by fine driving stock, blooded stallions and fancy racing, trotting and pacing stock. Jacks and heavy draft horses followed next. Following the long line of horses the cattle came up for inspection of the thousands that were comfortably seated in the grand stand with plenty of music to make the occasion more charming. Most of the cattle shown represented fine blooded dairy stock, and no better showing could be seen in any section of the state. The stock shown was complimented by thousands of ranchers and doubtless will serve as an incentive to many to 'get out of the scrub rut.'"

In the community exhibit Kingsburg took away the largest purse, which was $300. The display was a remarkably fine one, representing a model farm of 20 acres, with irrigation proceeding, and every feature of the work on such a ranch worked out in the model.

Among the other awards made are: Sanger, second premium, cash prize of $200; Selma, third premium, cash prize $150; Fowler, fourth place, with a cash prize reward of $100; and Caruthers, $50 prize.

A feature which attracted considerable attention was maintained by the post office department, giving instruction in handling of parcel post matter, also information as to more extended use of the post office facilities. This was most interesting because of the lessons directly taught, and more because of the fact that postal officials recognize the necessity of getting closer to the people, in other words, doing a bit of advertising. For instance, demonstrations were given showing the possibilities of shipping half a crate of eggs within ten miles for 15 cents, a plow point for 11 cents, or 50 pounds of groceries for 54 cents, or a three-dozen egg crate may be shipped anywhere within the second zone for two cents. This booth, which was a big one, was crowded at all times.

Judging in the horse classes, which was conducted in front of the grand stand, was done by F. M. Welchel. V. F. Dolcini, of the university farm, was judge of the cattle classes. Horticultural classes were judged by Horticultural Commissioner Cook, Deputy Weldon and Ernest Braunton. The latter was also judge of the ornamental plants.

The overcrowding of the live stock sheds was so apparent that two strings of sheds will be built before next year's fair. In fact, the management has determined before the next fair shall have come off, to build larger and better buildings to handle the immense throng.

Animal industry should be greatly encouraged by the display of live stock made at our fairs this year.

Fresno Fair Grounds

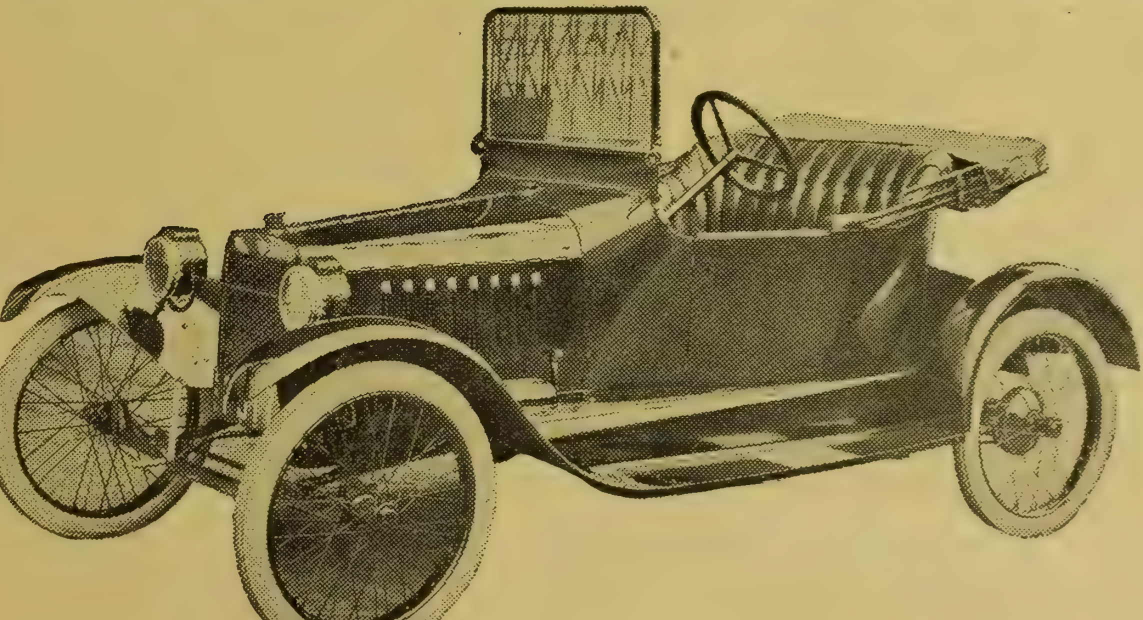
RIVERSIDE COUNTY FAIR

Last year's fair was an experiment, and so successful that a sound organization was formed and plans laid which will soon mature in the second annual fair, October 13-17.

The Riverside County Fair Association was incorporated early this year, 33 directors chosen and the following officers elected: President, J. F. Backstrand; vice-president, J. M. Davison; secretary, O. P. Sanders; treasurer, M. M. Milice; manager, J. E. McGregor. In the new fair grounds are 42 acres of land in a choice location near the electric line and steam road and just at the edge of a beautiful park lagoon. A spur track has been built from the railroad so exhibitors may unload their stock at the gate. Permanent improvements to the extent of $20,000 are being made on the grounds. The third annual poultry show is to be held in connection with the fair. About the entire grounds a high ornamental fence has been erected.

Entries are being received in great numbers and prospects are for large exhibits in all lines. Exhibitors are being especially attracted this year by the $10,000 to be awarded in premiums. Several of the prize-winning horses from the state fair at Sacramento are to be exhibited in the horse show. One feature of the swine division will be the wild hogs from the state school at Whittier. There is to be an apiary division and a large exhibit of agricultural products. A notable women's department is planned, with a "better baby" contest and a collection of cooking and sewing and juvenile work. There will be a fine arts division, educational exhibits and displays of minerals, machinery and vehicles.

1915 Saxon $460



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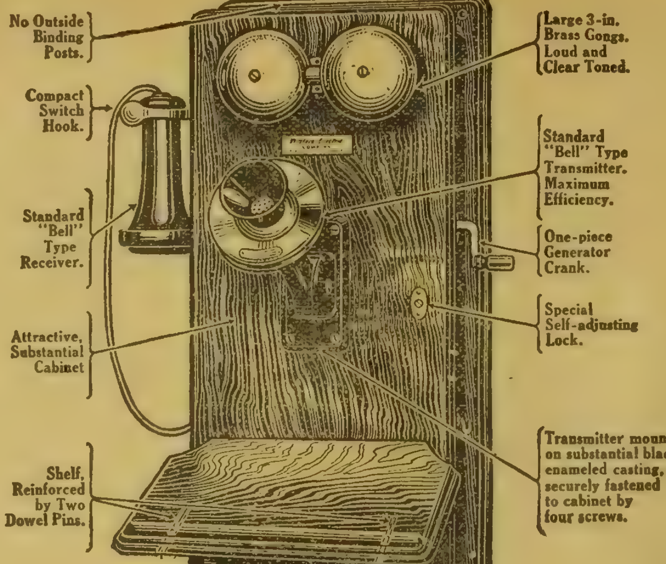
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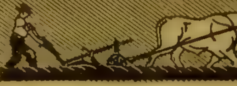
General Agriculture



"CLEANING UP"

Written for the California Cultivator
By Sacramento Valley Contributor.

Just how much "cleaning up" on a farm can the average busy farmer do at a profit?

This is a question that suggests itself time and again to any one who lives on a farm and gives any thought to his work.

On a large percentage of the farms in any community things are not kept well cleaned up and there is a condition of disorder rather than neatness and tidiness. Is this because it pays better to "let things go" than to be continually picking up and straightening up and arranging and putting away machinery and gathering boards and kindling wood, and the thousand and one other things the neat man on a farm sees to do? Or is it that some are naturally neat and others slovenly? Or would it pay better on all farms if everything was kept "spick and span" at all times?

We believe it is the experience of many of the best farmers, not only in America but all over the world, that it pays to keep a farm orderly, and that there is no better motto, not only from the standpoint of "peace of mind" but also from that of economy, than "a place for everything and everything in its place."

There are good fundamental reasons for this. Hours of time are lost looking for tools that have been left "lying around," and that should have been picked up and put in their proper place.

On one of the best managed and most profitable ranches in the Sacramento Valley, in the old grain farming days, if a man took a tool from the shop to fix a piece of machinery and did not bring it back to its place, it meant his discharge. The owner of this place prided himself on the neatness of his buildings and grounds. Every spring all sheds, barns and fences were whitewashed. After plowing time every plow was gone over, nuts tightened, wearing surfaces greased and other parts painted if they needed it, and the implement put away under a shed. Harrows were all cleaned up and painted, then stood up in a shed. And it is surprising how little space it requires to house harrows when they are set up on edge in this way.

There was literally a place for everything on this ranch. There was shed room at the sides of a big hay barn for all of the idle stock and young mules, and when this barn was filled with hay the rough feed for this stock for a year was in place for them, and only one more operation required, that of throwing it into the racks—no hauling of feed in muddy yards in midwinter because of lack of thought in planning the year's operations.

Neatness and order was made capital of on this place and the owner made money while many of his neighbors went broke.

There is no question but that it pays equally well to keep a small place neat. We all know of places where shovels and hoes and cultivators and hand tools of all kinds are around in the way and under foot all the year round, but on this kind of a place where apparently everything is floating around loose, the very thing you want is not to be found.

It generally takes some one "crank" around a farm to do the "picking up," and "keep after" everyone else on the place to make them be neat. This one person must be continually at it. First, on a badly disordered farm there must be a big general clean up, and places must be provided for all tools and the principal machinery. Then some one place must be made for a "junk heap," where a lot of miscellaneous things useful sometime perhaps, but not in regular use, may be put. All trash and everything that will make firewood should be stacked in some place handy to the stove, or picked up into old sacks and piled in some shed or alongside the house.

After this general clean up comes the struggle to keep things in shape and in place. This more or less self-sacrificing "crank" who has the neatness of the place at heart must be willing to "pick up" after everybody on the place, and gradually others will get the "be neat" habit unconsciously. In a short time it would be hard to re-establish a condition of slovenliness.

Let everyone who reads this give the subject some serious thought and see if by being the "crank" he cannot do himself and everyone on the ranch, and perhaps in the neighborhood, some good.

DOES AN AUTO PAY THE FARMER?

The question has been asked at least a hundred times by neighbors and friends if it "pays to keep an auto on the farm." I would say that this depends very much upon the auto, and a great deal upon the farmer. My own car I have driven four years, almost continuously, covering something like 60,000 miles in that time. This mileage was not all made "for fun." Much of it represents trips to town on business, with loads of stuff for market; trips, also, to distant points in quest of a particular breed of hog, fowl or calf. As a means of getting there, and getting there quick, no comparison can be made between motor car and the horse-drawn service.

With all its hard service, through mud and dust, rain and sunshine, my car has cost less than this same service would have cost if rendered by team; moreover, the time saved represents enough to buy a rig or two.

As a Market Vehicle.

The motor car makes it possible to derive returns for certain things that would not otherwise be possible. For instance, in early spring we have a quantity of rhubarb, celery and other vegetables of such quality as to demand an extra bonus provided we get them to town by 7:30. It is eight miles to town—a good two hours' trip by team with a load. By removing the tonneau seats and placing a platform on the rear deck, I can haul a load of 700 to 1000 pounds on my car, and get this load to town in 30 or 35 minutes. So the motor can get the stuff to market "while the dew is still on." A team can't do that. It brings back a load of supplies, empty cream cans or goods for the neighbors, for which they gladly pay a reasonable sum for transportation.

Then there is the pleasure, and what I please to call the "benefit" feature of a car for the farmer. Formerly it was just about impossible for us to attend church in town, or go to a lecture, a good show or other amusement. The trip by team consumed so much time that it made a very late Sunday dinner, or an all-night session on the road when coming home after an entertainment. Now it is easy—just a half an hour's spin going or coming, which means dinner on time, and everybody in bed at a decent hour. Sometimes I really wonder if it is eight miles to town; in former years I was dead sure it was ten.

I do practically all of my own repairing, and visit the garage only for oil and gasoline. By this means the upkeep expense is just about nothing. A motor car does not demand such constant attention as a horse. but there are some things absolutely required to keep in perfect running condition and reduce expense bills.

As to the make of a car—be sure that it is a good one, manufactured by a reliable concern, and by a company that gives promise of doing business for several years. You may need parts later on, and want to know that the company is still manufacturing them.—Successful Farming.

THE POTATO CONVENTION

(Continued from Page 339.)

a circulation that all plants may obtain pure water. Periods of drouth followed by irrigation make warty potatoes.

Seed Selection and Inspection

The Burbank is now the principal variety grown, although the United States department of agriculture is trying to find a more disease-resistant variety. Seed potatoes now come from Oregon and are grown in California one year to become acclimated before being used for the main crop. It is hoped that seed stocks may soon come from the higher California valleys, where potatoes grow more vigorously, and that this seed may be kept free from all disease. All potatoes are now pretty generally affected with rhizoctonia and fusarium. In some states, notably Wisconsin, a system of inspection has been inaugurated whereby growers who intend to sell seed pay a government or state inspector to go over their fields at blooming time and later to ascertain if varieties are true to type and free from disease. If so a certificate is given. This system will undoubtedly be used here. It is also important that small cull potatoes be picked up and fed or made into human or stock food rather than left on the field to harbor disease and make volunteer growth.

Storage of Seed

Seed must be stored in a cool place, where it will not sprout nor become diseased, if the plants grown from it are to be vigorous and healthy. In a hot country this requires thick-walled buildings that can be cooled out at night and kept closed during the day. This is not now being generally done and is recommended as a necessity.

Diseases

Rhizoctonia is a fungous disease that lives in seed potatoes and soil. It appears as specks on the tuber and rots off the underground stems. It is claimed by Mr. Shear to have caused a loss of $1,000,000 in the delta region this year. It is eradicated by a long rotation of crops and prevented by clean seed.

Wilt, fusarium and verticilium cause discoloration of stems and tubers and a wilting of the growing plants. Clean seed and rotation are recommended for their control.

Scab, introduced by diseased seed, may be treated by soaking seed tubers affected for two hours in a formaldehyde solution consisting of one pint to 30 gallons of water.

Tuber moth is a storage disease, controlled by fumigation.

The eelworm causes damage by burrowing into the tuber and is avoided by using clean seed.

SUGAR BEETS

(Continued from Page 339.)

still more apparent. The comparatively small expense of producing an acre of beans, barley, wheat or oats, appeals to the farmer for different reasons. He has less invested in an acre of grain or beans, and the effort to produce either is less than that required to produce an acre of sugar beets. If we stop at this point the farmer will not raise sugar beets. But if, like the ordinary business man, he is succeeding by a close study of modern methods and efficiency, he will study the problem from both sides. If by the application of a more intelligent rule of selection and the more thorough preparation of the soil, and by cultivating it, he finds he can produce a crop paying him from 25 to 40 per cent better than some other, he will take the added risk and assume the harder work.

In the above statement of the higher cost to produce an acre of sugar beets, every item of expense is figured in the amount. Of course many farmers would do their own team work and save considerable. If the same rule is followed in charging expenses against the production of the grain crop it will be seen that the margin for any grain crop above expense of production is well under $15 per acre for the average. It may be stated, plainly and empratically, that it does not pay to raise a poor crop of beets. The average yield, about 11 tons, is not good enough. No farmer raising sugar beets should be satisfied with less than 15 tons. At 15 tons his profit per acre will be more satisfactory than from any other general farm crop, including potatoes.

Then there is the indirect benefit which the farmer receives from the raising of a sugar beet crop on his land, which is of great importance. In many experiments made to test this, and in the experience of all sugar beet growers in every section of the country, the increased productivity of the soil on which the beet crop has been grown, especially for grains and potatoes, is remarkable. The following figures are reliable as showing the results in the beet growing sections of the rotation value of this crop:

In a section where wheat yielded 27 bushels to the acre before the beet crop rotation nearly 43 bushels were produced the next season, with very light disking of the soil. The crop of barley in this section increased from 39 bushels to 59 and oats from 41 to 61. These figures are average and not outside figures.

This country will always produce grains; they are the great staple crops. In many of the old grain producing sections of this state these lands have lost their great fertility because of a wrong system, or rather lack of system, of cropping. The coming of the sugar beet proves what may be done to increase the grain yield. At the same time the indirect benefit of sugar beet cultivation is shown to the farmer and is well worth his consideration.

COVER CROPS

Fenugreek
Melilotus
Burr
Clover
Vetches

produce humus and nitrogen in the soil — the two big essentials in groves and orchards. From our studies of the needs of the citrus belt this year, we are strongly recommending the following:
FENUGREEK: is a rank and rapid grower, producing successfully on poor soils.
MELILOTUS INDICA and BURR CLOVER are also adapted to heavy and poor soils as they produce a deep and heavy root system resulting in the breaking up and in the porosity of the soil.
VETCHES: We are headquarters for imported and Oregon vetch.
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has increased their crops from 200 to 300%, thus giving more humus for the soil and more nitrogen -- gathered from the air by the nitrogen gathering bacteria and deposited in the soil through the nodules they form. The cost—less than $2.00 per acre. For booklet on *Farmogerm*, advice on Cover Crops and Prices, write to Dept. C

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A Journal of Horticulture and Agriculture

By
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115 and 117 N. Broadway,
Los Angeles, Cal.

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Copy for change of advertisements must be in the office on Saturday preceding date of issue. New advertising copy must reach the office not later than Tuesday to insure insertion.

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Thursday, Oct. 8, 1914

OUR ADVERTISERS RELIABLE

We guarantee our subscribers against loss through dishonesty of any advertiser in the Cultivator. We do not attempt, however, to adjust trifling differences between subscribers and honest, responsible advertisers, nor will we pay the debts of honest bankrupts. Notice of complaint must be sent us within 30 days from date of the transaction, and the subscriber must have mentioned the Cultivator when writing the advertiser.

SILO CAMPAIGN.

Texas has been engaged in a general campaign of education regarding the advantages of silos. The interest has become so great that a census recently taken showed the establishment in that state of 8560 silos, costing over four and a half million dollars. The campaign is being pushed along by the Texas Business Men's Association. They have made thorough investigations and have unbounded faith in this method of furnishing cheap succulent feed.

THE VERDICT

There is an unfortunate condition in the labor situation in that there are always supplies of incompetent help, and too often they do not have the desire to become competent. There are also cases where labor must be done and the supply of help seems insufficient. To make inefficient workers more efficient is certainly a movement worthy of support. An interesting statement is given on another page of the Cultivator from Mr. Gilligan, president of the Agricultural Club of San Quentin. The question in the last paragraph of Mr. Gilligan's article is up to the growers to answer. Let us give the helping hand.

DRY FARMING CONGRESS

The International Dry Farming Congress, Soil Products Exposition and International Congress of Farm Women is to be held at Wichita, Kansas, this week and next. It will close on Saturday, October 17. Reports from there show that there has been gathered a wonderful display of working models, and demonstrations are made of the various methods of manufacture of farm implements and of the effectiveness of up-to-date machinery. The stockyards at this place are giving a special feeder stock demonstration with cattle. It is estimated that before the close of the exhibits 200,000 people will have inspected them.

FEDERAL AID FOR BEETS

The department of agriculture has decided to establish permanent headquarters in Los Angeles, from which extensive investigations will be made as to sugar beet culture. It has been represented to the department that with 90,000 acres of sugar beets in the southern part of the state there is great need of all the help the department can give in controlling pests and in determining best conditions of culture.

The industry has been somewhat discouraged by the removal of the tariff. Notwithstanding the jump in prices made possible by the war the manufacturer is the only one receiving the benefit, and the grower is still marketing his beets under the 75-cent reduction which was made by the factories this season.

DON'T BE TOO SURE

The attorney general of this state has given an opinion regarding the eight-hour law in effect that it probably contravenes the 14th amendment to the federal constitution and would be put out of commission by the United States supreme court. However, the surest and safest way and best way of expressing opinion in this matter is at the polls, so no matter how unconstitutional the bill may be, let us vote against it, and let the vote be so overwhelming that it will discourage a similar measure ever being forced before the voters at a future election. Let every reader of the Cultivator use the mails to reach everybody within his acquaintance to make sure that as many votes as possible are worked up against the meassuse. State some of the disastrous things which will occur if the bill passes and is declared constitutional.

PANAMA-PACIFIC

President Moore writes regarding the Panama-Pacific Exposition that any impression that the exposition will be deferred a year or even a day, should be corrected, for the exposition will open on Saturday, February 20, 1915. "As to attendance, all expert opinion agrees that there is nothing in the situation, even if continued through 1915, that will affect seriously the willingness or ability of the people of the western hemisphere and of the far east to visit the exposition. Some opinion is firm that travel to California may even be increased by the war. The decision of the exposition management has, however, been reached without regard to that consideration. We consider it our duty alike to our nation, to the participating nations, to our exhibitors and to ourselves to carry out the plans as originally laid down and which, now nearly at fruition, promise the most important, the most beautiful and the most successful exposition in history."

PRODUCE MORE

American newspapers have been busy for the past two or three months discussing the effect of the war upon this country. At the very first it was hard to subdue a feeling of elation that there would be a large increase in business in this country because of the European disaster. Later when the pinch came as the result of the war it was evident that America and all the world was suffering with Europe. Cotton growers, sugar beet producers in need of seed and dozens of other bodies of farmers felt the pinch; grain was perhaps benefited. But as the country devises its own way of doing things—for it is becoming apparent the European war is not to be short-lived—we believe there will be at least a partial recovery from the present depression. Every effort is being made to improve transportation conditions. Capital is also being interested in factories which shall work up our own cotton and other products so far as possible. The greatest problem is, however, the one of transportation, and it is so great a problem the country over that it will encourage extension of American shipping until it can in a degree handle the products of our farms. The world must be fed, and so large a portion of it is engaged in war that the remainder which does produce will find ample market.

So the producer must fit himself with implements and appliances to work his farm to the limit. Plans are being made now for next year's crop. We believe it is wise to plan large. Make every acre produce to the utmost, even if it requires purchase of new and improved machinery. An eastern exchange in discussing this matter of feeding the world and the fact that each farm is not producing up to its fullest possibilities, makes this statement:

"As the pressure for supplies becomes greater, it becomes more evident that the world cannot afford large farms skimmed over with careless culture. In an actual experiment, of a gain of 200 per cent which was made in the productiveness of a certain area, 100 per cent was found to be due to better plowing and harrowing, 50 per cent to better cultivation, and the rest to better seed."

If this is true of farming in general it is certainly true of the opportunities which are before American producers.

"The handwriting on the wall is plainly visible and we should prepare ourselves to meet the crisis before the crisis meets us. It means much and yet all that we can do is to do all that we can with the exercise of care and thrift. Our work begins this fall in our plowing and seeding, and our opportunity to help will come next year at our harvesting and selling. We have more at stake than our profits, although our profits will be a goodly stake. We have at stake our commercial supremacy, our agricultural leadership, and above this, towering over everything and stifling our selfish hope of gain or our commercial instincts, is our ability and our willingness to fill the pitiful hands which we know will be stretched out to us from the devastated, wasted fields across the seas."

A word of warning however may be in order, and this because of a circular just received from the department of agriculture, which calls attention to the danger in special crops or those which inexperienced growers are very liable to fail in, that is, crops which are used for the production of drugs, perfumes, and other products for which we have depended on Europe. There is something attractive in growing a crop which few others produce and which has little competition in the market, but the growth of these plants calls for special talent, and if a contract is not made for a crop before it is planted it is very probable there may be no market for it. Staple food products always find a ready market, and while not always at long prices there is minimum risk in growing them.

Agricultural News Notes

The National Nut Growers' Association meets in Thomasville, Georgia, October 28-30.

In the province of Ontario, Canada, there are 30 cooperative associations marketing fruits of members.

Cuban sugar interests are very optimistic over prices for their produce. The sugar mills are putting in all the men they can secure at work preparing the plants for early grinding.

The "telescribe" is an instrument recently perfected, capable of reproducing on the wax cylinder of the ordinary dictating machine both sides of an ordinary telephone conversation.

To keep out the potato wart disease the United States has prohibited introduction of potatoes from Newfoundland, St. Pierre, Miquelon, England, Scotland, Ireland, Germany and Australia.

American apples sold in Sweden are known as California, Oregon and American apples. The best qualities sold are Winesaps, Spitzenbergs and Jonathans. Red apples are preferred; green apples, with the exception of Newtowns, cannot be sold there.

Congressman Bryan of the state of Washington has introduced in the House a bill for the construction by the government of a railroad from Marysvale, Utah, southward into the national forest in Arizona. Marysvale is the southern terminus of a branch of the Denver and Rio Grande.

The practice of inoculating pigs with cholera serum is now extensive in Hungary. In the five years preceding April, 1914, government reports show that more than a million animals have been operated on. Pigs intended for fattening are generally treated with the serum shortly after being put into the fattening sties, and losses are thus avoided.

The United Fruit Growers of the Pacific Northwest, whose products in the future will be handled exclusively by one large central organization known as the North Pacific Fruit Distributors, did a large business last year. The united organizations shipped 3958 cars of fruit and 1125 cars of potatoes. They derived from their sale a total of $3,069,935. Apples brought an average of $1.25 a box.

The Georgia peach crop for 1914 was not so large as had been expected; estimates place the number of cars between 3200 and 3500. The prices received for the crop seem to have been satisfactory in the main. As a whole the fruit has been of high quality and free from disease and worms. The pack also has been above the average. The growers are learning by experience that the best fruit pays the most money, and spraying, as well as general orchard management, is improving from year to year.

Leaving out of consideration the mountain pastures, whose area is difficult to estimate, the area of the land available for agriculture in Albania is between 500,000 and 600,000 acres. The greatest land owner is the state, and the large estates of which it disposes are partly absolute state property and partly "mewkuf" and "vacuf"—i. e., ecclesiastical property. The large private estates are in the hands of about five great families, each of which possesses from 100,000 to 150,000 acres of land. Medium-sized estates of about 500 to 1000 acres in extent are fairly common all over the country, while peasants' farms of about 25 acres are rare in the plains, but prevalent in the mountains.

Agricultural News Notes of the Pacific Coast

Northern California

The close of Shasta County's prune harvest shows a very small crop.

Alturas, Modoc County, held a two-days' farmers' institute September 29 and 30.

A new cheese factory is to be established at Patterson, in Stanislaus County.

The rice crop of Yuba County will this year net the growers over $200,000.

Vacaville, Solano County, has started a movement to secure a county farm adviser.

Mendocino County owners of timber lands have organized a forest protective association.

The university farm at Davis has opened its fall term with almost double last year's entries.

In the milking contest at the state fair Miss Blany, owned by A. W. Morris, carried off the honors.

There was a meeting of deciduous fruit growers at Sacramento October 7 to discuss standardization.

Over 2,000,000 trees will contribute to the exhibits of the California Apple Show, to be held in San Francisco October 1-11.

A Willows Holstein breeder has sold 20 pure bred cows, heifers and calves to a Southern California buyer for $400 each.

Walnuts received at the Fullerton-Placentia packing house are running 97 to 98 per cent No. 1's. The crop is estimated at about 75 per cent of normal.

The schools of Vine Hill, Contra Costa County, were closed for two weeks to allow the children to assist in grape picking, as the yield of grapes is unusually large this year.

The Turlock cannery has just completed a banner pack of 100,000 cases, exceeding last year's records by 35,000 cases. Seventy-five per cent of the pack consists of peaches, 20 per cent apricots and 5 per cent pears.

Records of the Orange County Vegetable Growers' Association for the year show total receipts of over $6200. The membership of the association is among growers at Villa Park, where they have their own packing house.

The different units of the Yolo County farm bureau have determined to hold a general meeting at Woodland, October 30. It is proposed to have a competitive exhibit from different parts of the county at that time.

Ripe dates the latter part of July are reported from the United States agricultural experiment station at Indio, Riverside County. As this is at least three months before the fruit from the Persian Gulf can reach our markets, the industry here seems to have a bright future before it.

Sixteen thousand young wood oil trees were recently shipped from the United States plant introduction garden at Chico, Butte County, to points in Florida and Georgia. The tree, an importation from China, bears a nut which yields an oil highly valued in varnish production.

Central California

Kings County fair is on at Hanford this week.

A grower near Visalia has a record of producing 30 tons of sugar beets to the acre.

The Poplar grange will entertain granges of Tulare County the evening of December 20.

There will be a butter scoring contest during the dairy show at Modesto October 15 to 17.

Fresno's district fair was held the week ending last Saturday. It was pronounced a great success.

A recent meeting of the Fairmead unit of the Madera County farm bureau was attended by 75 growers.

Prominent irrigationists of the state are hoping to bring to Modesto the 1915 congress of the International Irrigation Congress.

Alpaugh, Tulare County, closed its first annual agricultural fair the last week in September, after a very successful exhibit.

The Madera Unit of the county farm bureau is discussing the practicability of organizing a cooperative poultry association.

Rice grown on alkali land at Delano, Kern County, shows up in remarkably fine shape, and will encourage more extensive planting another year.

Plans to establish a branch of the state agricultural college on the Kearney ranch, in Fresno County, were discussed by Dean Hunt at Fresno recently.

Several grape packing houses of the Fresno district closed down the last of September, waiting for the eastern demand to catch up with the California supply.

Manager Madison, of the Associated Raisin Company, announces August shipments of raisins totaling 8,900 cars, as compared with 5,000 cars for August, 1913.

The Turlock section of Stanislaus County is in the middle of its bean harvest. There are some 3,000 acres to be harvested. Indications are for an unusually heavy tonnage.

Modesto has organized a unit of the county farm bureau as the first step toward securing a county farm adviser. Other sections will follow with the formation of local centers.

The Visalia Cooperative Creamery was awarded the gold medal for the highest score at the state fair at Sacramento. Thirty-four California creameries competed for this honor.

Much enthusiasm was evinced at the meeting of the committee appointed by the Fresno District Fair Association to arouse interest in securing a farm adviser for Fresno County.

The Associated Raisin Company reports extensive shipments of raisins during the past month to dried fruit dealers of England, Denmark, New Zealand, Australia and the Orient.

Olive growers of the Lindsay district of Tulare County have determined to join the Tulare County Growers' Association, adding 125 acres of olive orchard, to be handled cooperatively.

Southern California

Hemet will ship 75 cars of oranges this season.

The opening day of Ventura's County fair showed 3,000 visitors.

Saticoy has organized a center of the Ventura County farm bureau and elected H. C. Sharp, director.

Ventura County walnut growers are very well pleased with the quality of the nuts now being harvested.

Chili drying houses of Garden Grove, Orange County, have begun work. A good crop is expected.

The Goleta packing house has finished cracking nuts of last year's crop and is ready for the new nuts.

The Antelope valley of Los Angeles County reports a bumper crop of almonds. It is estimated at 125 tons.

Dates are now being picked at the Heber experiment farm. A total crop of about 36,000 pounds is expected.

Ventura County's bean acreage this year is about 50,000, and the crop is estimated as well into a million sacks.

October 16 will be San Jacinto day at the Riverside County fair, which will be held from the 13th to the 17th, at Riverside.

The Ventura County farm bureau has appointed committees on seed selection and expects to form a hog raising association.

The Fallbrook unit of the San Diego County farm bureau held a picnic last Friday. County Farm Adviser J. A. Armstrong was present.

Orange County's walnut crop is valued at $900,000 this year. That county claims to produce about half the walnut crop of the state.

The Santa Paula farmers' club held a meeting the evening of October 6, which was addressed by Dr. Webber, of the citrus experiment station.

Nuts being received at the packing house of the Santa Ana Valley Walnut Growers' Association are testing 97 per cent first class sound meats.

The lemon pruning demonstration recently held at Sespe under the auspices of the Ventura County farm bureau was attended by 90 growers.

Citrus growers of Olive, Orange County, are planning to build a new packing house. A building committee has already been appointed by growers.

Los Angeles has been added to the list of cities which will receive the "Farm-to-the-Table" service of parcel post. The postmaster will receive names and addresses of growers, with articles they have for sale, and these will be distributed throughout the city in bulletin form.

At the annual meeting of the Bloomington Fruit Association directors for the ensuing year were elected, as follows: A. D. Litts, Lou F. Chapin, W. P. Martin, F. A. Wood, C. H. Ehrhorn, C. E. Wheeler, G. Leiser, D. C. Swartz, George W. Kelley and Mrs. P. H. Watson. The officers elected are: W. P. Martin, president; D. C. Swartz, vice-president; F. G. Webber, secretary and manager. The association shipped 32 cars of lemons and 265 cars of oranges.

The Coast

The cotton gin at Chandler, Ariz., is running full blast.

The Oregon state fair was held at Salem September 28 to October 3.

A train of 24 carloads of sheep left Grangeville, Idaho, for Chicago, recently.

Arizona has sent a large exhibit to the dry farming congress, to be held in Wichita, Kansas, this month.

The Pecos valley, in New Mexico, will hold an agricultural fair at Roswell the week beginnig October 24.

Over 6,000 head of Arizona cattle have been shipped by one firm to Bakersfield, California, for fattening.

Sugar beet factories of Utah began slicing beets about the 20th of September and are now in the middle of their heaviest run.

The North Pacific Fruit Distributers are protesting against what they call unwarranted slashing of apple prices by independent sellers.

On account of scarcity of Oregon potatoes dealers have been compelled to bring in supplies from the Yakima district in Washington and from California.

Cattlemen of Cochise, Santa Cruz and Pima counties, in Arizona, have organized an association for the purpose of betterment and protection of cattle ranges.

Shipments of apples from North Yakima were estimated at 6,000 cars early in the season, but indications now are that the estimate was almost 2,000 cars too low.

Colorado growers of Rocky Fords are casting up accounts for the marketing season. They find they have shipped 11,000 carloads of cantaloupes and received fair returns.

The Northern Arizona fair will be held at Prescott October 15 to 17. This is the annual exposition of the five counties of Yavapai, Mojave, Coconino, Navajo and Apache.

There was an unusually large number of livestock exhibited at the Washington state fair this fall. Sixty-five hundred dollars was distributed in cash premiums to exhibitors.

There has been heavy buying of wheat in shipping centers of the Northwest, presumably by foreign interests. It is estimated that over half the crop is already disposed of.

Farmers of Paradise, Oregon, are saving the best of their straw to use, if necessary, as roughage to lengthen out the short hay crop. Owing to the prolonged dry spell ranges are said to be fast drying up.

A mass meeting of farmers of the "North Side" of the Salt River Valley, Arizona, was held last week for the purpose of effecting an organization of farmers, with the primary object of employing a farm adviser.

The sale of 1,000,000,000 feet of standing timber from the Kaibab national forest in Northern Arizona, with authority for construction by the purchasers of 200 miles of railway, has been approved by Secretary Houston, of the department of agriculture.

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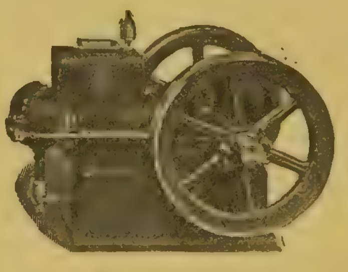

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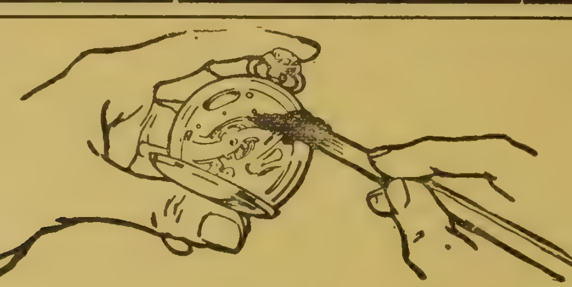

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Standard Hand Separator Oil

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Thoroughbred Poland China Swine
High Grade Stock of Best Strains.
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THE AMERICAN JERSEY CATTLE CLUB
324 W. 23d St., New York City.

Live Stock and Dairy

DAIRY ASSOCIATION—CREAMERY OPERATORS

The Second Annual Convention of the California State Dairy Association, in conjunction with that of the California Creamery Operators' Association, will be held in Modesto, October 15-17. There will be addresses by Professors G. H. True, Leon M. Davis and H. E. Van Norman of the State University, and Messrs. Graham, of the Panama-Pacific Exposition, J. P. Murphy, Robert Holcomb, A. Jensen, S. H. Green, Hon. J. W. Guiberson, F. W. Andreasen, of the State Dairy Bureau, G. W. Pierce, A. W. Morris, S. A. W. Carver, and others.

In the butter contest which will be held in connection with the convention the following rules will be observed:

Exhibitors are permitted to make only one entry and not more than one entry will be permitted to be made from any one creamery.

Entries must not be less than 18 pounds of butter.

It is suggested that for convenience, contestants send a small cube of butter, being nine inches square and the height of the regular two-pound square, this being equivalent to nine two-pound squares, with the advantage of keeping better on account of being in a solid block.

Entries of butter, while recommended to be in a small cube, may be in a 20-pound tub or any package at the exhibitor's option, provided it bears no distinguishing marks that cannot be readily removed by the committee.

Entries should, wherever possible, be shipped by Wells, Fargo & Co's. Express, and in time to arrive at Modesto not later than the evening of Oct. 14th, in order that they may be scored by the judges.

To insure the neat appearance of your package on arrival, cover it with stout paper or burlap.

All entries become the property of the Association, and after crediting the exhibitor with his annual dues, the proceeds of the sale of the same will be devoted to the prize fund, etc.

All those entering in butter contest will be entitled to compete for a special scoring prize. The one coming closest to the judges' score to win $10.

The secretary of the Association is A. P. Ferguson, Modesto.

ALAMEDA COUNTY FAIR

Written for California Cultivator

By J. H. Lettow

Truly a county fair could have no better setting than the one at Pleasanton, nestling, as it does, beside a beautiful mountain and in the midst of a fertile valley.

The stock exhibit no doubt would have been larger had the premiums offered greater inducements, but even at that the cattle department was well represented both by local breeders and several from outside the county. Those who came from a distance deserve praise for the fine condition in which their stock was kept. Hogs and especially sheep were well represented. Stalls and pens were very convenient to the main entrance. The horses were sent to the far end of the grounds, but once found, the visitor couldn't help admiring what this section produces.

F. M. Whelchel of Santa Susana, Ventura County, was the judge selected for awarding the prizes among all stock, and he did his work carefully and well.

Exhibits in fruit, vegetables and grains showed superior quality over those of previous years. Mention must be made of the splendid educational exhibit in all departments made by the state college of agriculture.

Premium for best general exhibit from any organization, $50, was won by the Danville Grange, which also won silver cup for the best decorated booth. Washington township took the $25 premium.

It is to be hoped that with 1500 head of cows now being milked within six or seven miles of Pleasanton this fair will have a greater line of stock and dairy exhibits next year.

MILK CANS SHOULD BE JACKETED

The dairy division of the department of agriculture has just completed a series of tests on the change in temperature of milk in cans during transportation from the farm to the consumer. These tests established the importance of jacketing cans of milk with some appropriate insulating material.

It has been found that milk that has to be sent only short distances or preserved for only a few hours should maintain a temperature of less than 50 degrees. Even at these temperatures some bacteria will multiply and cause the souring of the milk, but the increase is slow, and during a few hours no serious results will occur. A temperature well below 50 degrees Fahrenheit, however, materially decreases the rate of bacterial growth.

On the other hand, where milk is to be shipped long distances, the initial temperature must be lower, assuming that no provision is made for maintaining the original temperature during transportation. Where milk is in transit for several hours it is necessary to cool it down to near the freezing point. So soon as the milk can is exposed to air temperature, and especially to the sun, the temperature of the milk begins to rise very rapidly, and every precaution should be taken to keep it from being raised by the outside heat.

A series of experiments was recently made in shipping milk cooled to 50 degrees. In these cases the cans were set in an open truck with no covering to shield them from the direct rays of the sun. The milk was hauled a distance of 13 miles and the average air temperature during the trip was 82.65 degrees. The experiment showed that the cans that were hair-quilt jacketed showed a rise of only five and one-half degrees in three hours in the temperature of the milk. The cans that were wrapped with wet burlap showed a milk temperature of 58½ degrees in the same period, or a rise of eight and one-half degrees. The milk in the unjacketed cans rose in three hours to 78 1-2 degrees, or a rise of 28 1-2.

It is obvious from these figures that it pays to jacket the cans in order to maintain a low temperature during transportation.

CARE OF SOW AT FARROWING TIME

Brood sows should be allowed plenty of room to exercise in, up to about two days of farrowing time. They should be kept in yards and pens where they will not be obliged to pass through narrow gates, over boards, doorways or through low doorways where they are obliged to bend their backs to get through. Any one of these is likely to result in dead pigs at birth.

It is a good idea to feed whole oats scattered on the feeding floor or ground for a week or two prior to farrowing, so that the sow will be forced to exercise in getting her feed. When about due to farrow, the sow should be put into a pen which has been fitted with wall guards, where the pigs may find safety after birth. The ordinary pig guard is useless because it is neither high enough from the floor nor far enough from the wall, and the space underneath fills up with straw so that the pig is crushed almost as easily as if the guard were not there.

For thin, active sows a large pen may be used. For extremely heavy, fat sows it is best to have a pen space comparatively small, so that the sow cannot turn around quickly and thus step on her pigs. The sow should not be fed heavily just prior to farrowing, nor just after farrowing, but should have a thin slop for a few days, so that there may be no tendency to con-

Warranted to Give Satisfaction.

Gombault's Caustic Balsam

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A Safe, Speedy and Positive Cure for Curb, Splint. Sweeny, Capped Hock, Strained Tendons, Founder, Wind Puffs, and all lameness from Spavin, Ringbone and other bony tumors. Cures all skin diseases or Parasites, Thrush, Diphtheria. Removes all Bunches from Horses or Cattle.

As a Human Remedy for Rheumatism, Sprains, Sore Throat, etc., it is invaluable. Every bottle of Caustic Balsam sold is Warranted to give satisfaction. Price $1.50 per bottle. Sold by druggists, or sent by express, charges paid, with full directions for its use. ☞Send for descriptive circulars, testimonials, etc. Address

The Lawrence-Williams Co., Cleveland, O.

No More Blackleg

VACCINATE WITH BLACKLEGOIDS

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Kendall's Spavin Cure is the old reliable, *Safe* remedy for all cases of spavin, splint, curb, ringbone, bony growth and lameness from other causes. It keeps the horses working—not loafing. What it has done for others it will do for you. Keep a bottle of

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handy so you can use it quickly when the need arises. A one dollar bottle may save a horse for you. It's worth while to be ready. Ask your druggist the next time you are in town. Tear this advertisement out to remind you. Sold by druggists everywhere, $1.00 a bottle; 6 for $5.00. Keep it in the house for family use, as well as in the stable. Get a copy of "A Treatise on the Horse" at your druggists or write to

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For Sale:- REGISTERED JERSEY CATTLE. Both Island and American Types. **J. D. Huston.** Farm address, Imperial, Cal. Home address 1725 W. Adams Los Angeles

stipation. If there is any such tendency, a dose of epsom salts should be given in the swill.

The bedding in the pen should be kept absolutely dry, as dampness, particularly in cold weather, will very quickly cause death loss among young pigs. Within a week or two the sow and her litter should be moved out to a colony hog house, where they will get more exercise. When the pigs are two or three weeks old two or three sows may be turned together.—G. E. Morton, Colorado Agricultural College.

HOW TO AVOID SILO-FILLING ACCIDENTS

By observing three simple rules, the farmer who is using silo filling machinery for the first time may avoid some of the accidents which occasionally damage new machines beyond repair.

Here are the things that, according to W. E. Markey, university agricultural experiment station, the inexperienced man should do:

1. Be sure that the machine is being run at the proper speed.
2. Take care that corn is never put into the machine until the motion is up to full speed.
3. In stopping be careful not to shut off the power until the elevator is empty.

If the elevator is not empty the cut material will fall back and lodge in the fans. Then when the machine is started again, the cut corn jams the fans and as a result they are bent or broken.

DODDER IN ALFALFA

Dodder is a parasitic seed plant. The stems are slender, thread-like, yellowish or reddish and twine about the plant upon which they live. The life-history of dodder is peculiar. The seeds germinate in the ground. The young dodder plants soon attach themselves to other plants. Then the stems connecting the dodder to the soil soon break away, leaving it entirely attached to the host plant from which it must secure all of its nourishment. Avoid the introduction of dodder seed with alfalfa seed. Pains should be taken to remove affected spots in the field. In the large majority of instances this procedure will be sufficient. If the stand of alfalfa is very badly affected, plow up the crop before the dodder goes to seed and put the land in a cultivated crop for two or more years.—W. W. Robbins, Colorado Agricultural College.

HOG SHIPPERS SHOULD DEMAND CLEAN CARS

"While there are sanitary regulations requiring that all stock cars in which cholera hogs have been shipped be disinfected, it is up to the shipper to be on the safe side and see to it that all the cars he uses are clean."

So states Dr. B. A. Beach of the College of Agriculture, University of Wisconsin, relative to the matter of filthy stock cars, which are becoming a serious factor in the spread of hog cholera. Dr. Beach states that cholera germs remain alive for weeks in cars which have contained diseased animals. Cases are also on record where cholera has been brought into a community simply by the passing through of germ laden cars.

DAIRY NOTES

A dairying industry will automatically bring about hog raising and poultry growing, because the skimmed milk that is not used in raising calves can be marketed most profitably in the form of pork or poultry. Every dairyman can raise two hogs a year for each cow he keeps, and sour milk is one of the best poultry feeds in the world.—Texas Industral Congress.

The best time to feed silage is directly after milking or several hours before milking time. It has been found that when silage is fed immediately before milking the odors of silage impart undesirable odor to the milk. Calves soon learn to relish silage Yearling calves will consume about half as much silage as cows.

The whole measure of success in the average dairy business today depends upon an intelligent answer to that searching and vital question, "Is

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This is a Photo of the 20x40 Redwood Stave Silo Manufactured and erected by us on the Sheldon ranch, Kenwood, California.

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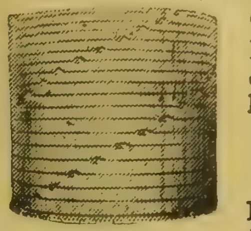

Built to suit All Uses and Users. Cheaper than Metal Tanks, last 10 times as long.

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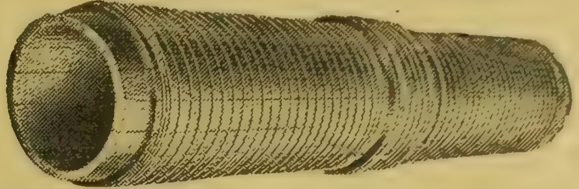

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Roberts Island

October 22, 10 a. m.
Col. C. G. Wiggins, Aucr.

every cow in the herd making a profit for you?" This question can be answered only by testing systematically the production of every cow, and weeding out the poor ones.

Where both feed and live stock are raised upon the farm you have two chances for making a profit—one upon the feed and another on the animals, and in case you break even on both, the manure is still left to maintain the fertility of the soil.

All milk utensils should be made from smooth-surfaced material, without seams, and all vessels should be discarded if the coating is worn off, as it is impossible to keep them clean. All utensils should first be rinsed with cold water, and then thoroughly washed with hot water containing soap or some washing powder.

Veterinary Queries

Answers in this column by Dr. Wm Petrie, 2714 South Harvard Blvd., Los Angeles, are without charge. For immediate mail answer remit $1.00. In writing questions give full symptoms or particulars of injury of animal

Care of Horse

Will you give a subscriber some useful hints as to the care and upkeep of a horse? I am on a ten-acre orange grove, planted two months ago, and have just bought a fairly good horse; although not a very fat one. Any advice as to feed, etc., will be appreciated.—Subscriber, Plano.

A large part of the knowledge necessary for the proper care of a horse must be gained by practical experience, but here are some general rules that should help some: Give one-sixth of the day's rations in the morning, two-sixths at noon and the remaining three-sixths in the evening. Give plenty of water half an hour before each feed and plenty between feeds, but none just before nor right after feeding. A horse should have one pound of hay for each 100 pounds of the horse's weight each day of 24 hours. The weight of the grain fed should nearly or quite equal that of the hay when the horse is working, but may be reduced one-half when he is idle. Every day that a horse is idle he should have very little or no feed at noon, but do not add that amount to the other feeds. Horses should have a tablespoon of salt once a day and a change of feed occasionally. A horse should not be put to work immediately after eating, but should be allowed half an hour or more to partly digest his food. There are good reasons for the above rules, but space will not permit of their discussion here. It should be sufficient to say that they have been thoroughly tried and found to work well. Grooming improves the coat and adds much to the health and appearance of a horse.

Lung Worms

About 10 per cent of my dairy calves have been taking sick with lung fever and nearly all of them die. They take sick after they are from two weeks to two or three months old. They cough and their ears hang down. When they lie down they hold the head and neck stretched out. For some time they drink milk as usual, but get weaker and generally die. Very seldom one gets well. Please let me know what can be done to check it.—Subscriber, Bakersfield.

The trouble is probably caused by lung worms. The history of the lung worm is not well known, but it is supposed to be in damp places in the pasture and to be taken in with the food. Usually we hear of it affecting young cattle in the summer and fall. The best remedy known is turpentine. Drench the calf with one ounce of turpentine in a cup of milk. For full-grown animals double the dose. Repeat this treatment every two or three days until cured. A better and quicker way to reach the worms is to use a hypodermic syringe and inject one-fourth the dose of turpentine clear, directly into the windpipe. The needle of the syringe should be passed through the skin and between the rings of the windpipe, and after injecting the medicine hold the animal's head up for a moment until the medicine runs down into the lungs. Two or three treatments of this kind will usually cure.

Foul Breath

I have a male cocker spaniel about 11 years old that has a very foul breath. Can your veterinary department suggest any remedy?—Subscriber, Palo Alto.

Probably the odor comes from decayed teeth. Take him to a veterinarian and he will extract them. If no decayed teeth are found, then give him two grains of calomel and repeat the dose once a week for a month or two.

Proud Flesh

I have two colts that were cut on wire two weeks ago, and I have been treating them with sheep dip and water, but proud flesh is starting to grow in the cuts. Can you tell me what to use to kill the proud flesh?—Subscriber, Crows Landing.

Burnt alum or air-slaked lime will usually stop proud flesh, but sometimes it needs more heroic treatment. After trying the above, if the proud flesh does not disappear, then get some nitric acid and apply a little with a swab. This will form a scab, and when the scab comes off you may need to touch it again with the acid. Be careful when handling the acid and do not get it on your hands or clothing. It is a strong caustic. There are some cases where the superfluous growth of flesh is so persistent that it becomes necessary to use the red-hot iron.

Wire Cut

Three weeks ago a colt of mine was cut by a barb-wire fence on front leg just above the hoof. The wound seemed to be all right for a time, but the leg began to swell and four ulcers have formed between the wound and the knee. The knee is slightly swollen, but does not seem sore. The wound is filling out all right, except that it has probably filled out too fast. I cannot decide whether there is proud flesh in the wound or not. It is very sore to the touch. Have used burnt alum, but it did not seem to have any effect. For a few days I have poulticed it where the ulcers are. What is best to do with it?—Subscriber, Solvang.

The swelling was caused by a little blood poison getting into the wound. The ulcers indicate that the poison has stopped and the swelling will probably not extend much farther. Your poultice is all right, but when making the next poultice use coarse bran and hot vinegar. Put it on quite warm. For the proud flesh get an ounce of nitric acid and apply it to the sore with a swab. When the scab comes off apply it again. Be careful when handling the acid and do not get it on your hands or clothing. It is a strong caustic. The wire may have cut off a nerve and dragged it out so it was exposed and a tumor has formed on the end. That would be a small white ball with a very small attachment. The wound will never heal while such a tumor is there. It must be drawn out and cut off close to the flesh so that the flesh will cover the end in healing. It will hurt when the nerve is cut.

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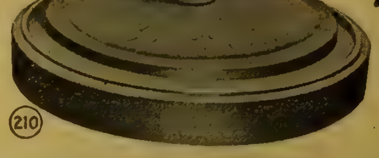

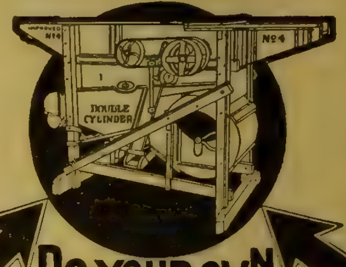

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Poultry for Profit

CARE OF MOULTING HENS AND DISPOSITION OF SURPLUS STOCK IN SUMMER

Written for the California Cultivator
By E. E. Cauble.

There has existed a wide range of opinion in regard to the best way of feeding and handling hens during the moult. All of the so-called quick methods have been forgotten or discarded, and those who practiced and advocated the starvation of the industrious hen to cause her to drop her feathers should be covering their faces in shame for if ever nice biddy deserved good feed and care it is during her change of dress, for at that time the entire being of a fowl is seemingly overhauled and put in working order. And the success of this general overhauling depends on whether they are supplied with plenty of good food and water or otherwise.

It is possible to take a bunch of scrubby-looking hens, and with care and good feed, bring them out of the moult a fine-looking bunch—in condition to be profitable in egg production for another year, but it must be done by right feeding and not by starving or even skimpy feeding. The hen is a machine, as it were, like a dairy cow, and your profits must be measured by the amount of balanced food she consumes. Any other method can hardly be profitable. However, there are other phases of the industry, and the range flock of the rancher does not come under this class. It may be plainly seen that the small range flock that has access to the barn, stables, stacks, etc., as a rule goes through the moult better than limited range flocks do. In order to correct this then we must provide the hen in close quarters with a variety of feed and plenty of it. She must have an added per cent of animal food; she must have more fat producing food such as cornmeal, cottonseed meal and sunflower seed and a good place to scratch for the needed exercise, which is important during the moult, as hens are liable to be inactive unless made to scratch for their grain.

Plan of Feeding

In the first place it is best to provide dry mash hoppers or covered troughs where dry mash may be kept constantly before them. This mash may be prepared egg food—which is best—or equal parts middlings, bran and cornmeal. Add five per cent each, bone, beef scraps, fish meal and charcoal (granulated). For early morning mash take chopped alfalfa (green or hay) or alfalfa meal and mix with rolled barley, scald and let stand a few minutes. To this add equal parts bran and corn meal, with a little fish meal or meat scraps. Mix all till crumbly and feed what will be cleaned up in five minutes.

Hens will hardly eat enough dry mash alone to supply their needs at this period, hence the wet mash which they eat readily. Most any kinds of grain will do so long as there are at least two kinds, as wheat and barley, corn and barley or Egyptian corn and wheat. I have used quite a lot of whole barley this year because it is cheaper, and prepare it in this manner with good results: Put the whole barley in a deep box or barrel with drain holes at bottom. Wet down thoroughly; in 10 or 12 hours wet again. This is ready to feed in about 24 hours. The hull is softened so that it is all easily digested. It should be used before it sours. However, a small amount of malted barley is very beneficial to the fowls and much relished. Mix wheat or corn with the soaked barley and feed in deep straw for the evening feed and give plenty to scratch for next forenoon. Always keep plenty of fresh water for moulting hens. I have found it a fine plan to provide shallow water troughs for the hens to get into with their feet. They enjoy it very much, and with a spoonful or so of kerosene in these troughs occasionally scaly legs can be cured or prevented.

Marketing Surplus Hens.

Most people wait too long to market their old laying stock; they start to moult, get ragged, lose weight, and the price is not satisfactory. If your hens are purebreds advertise them in some good farm paper about the middle of April. There is always somebody wanting good breeding stock at this date or later and willing to pay above market price.

At any rate sell old stock early in the summer when in good condition though they may be laying fairly well. This saves feed bills and insures good market prices, while eggs are at the minimum price of the year.

POULTRY SHOW DATES

Riverside, Oct. 13-17, 1914, County Fair Poultry show, E. I. Hammond, secretary.

Anderson, Cal., Oct. 22-24, 1914, O. W. Dais, secretary.

Stockton, Cal., Oct. 28-31, 1914, W. H. Mackay, secretary.

Sacramento, Cal., Nov. 2-7, 1914, C. A. Wilkins, secretary, Sacramento, Cal.

Santa Cruz, Cal., Nov. 11-14, 1914 inclusive, E. J. Harran, secretary, Santa Cruz, Cal.

Petaluma, Cal., Nov. 11-16, 1914, Thomas McGuire, secretary.

San Mateo, Cal., Nov. 12-15, 1914, Fred West, show secretary, box 701, Burlingame.

Willows, Cal., Nov. 18-21, 1914, Otto F. Schuchard, secretary.

Oakland, Cal., Nov. 24-29, 1914, Chas. G. Hinds, secretary, 535 42nd street.

Pasadena, Cal., Dec. 1-5, 1914, M. D. Cartwright, secretary, Pasadena, Cal.

Modesto, Cal., Dec. 2-5, 1914, A. D. Roberts, secretary.

San Francisco, Cal., Dec. 8-13, 1914, inclusive, W. H. Ingram, secretary, Fruitvale, Cal.

Porterville, Cal., Dec. 15-17, 1914, A. D. Fawcett, secretary.

Phoenix, Ariz., Dec. 23-26, 1914, Arizona state show.

Newburg, Ore., Jan. 5-9, 1915, C. Duer, secretary.

Coeur d'Alene, Idaho, Jan. 6-9, 1915, O. A. Laaks, secretary.

Los Angeles, Cal., Jan. 6-12, 1915, Henry H. Mumford, secretary, Prospect avenue, South Pasadena, Cal.

Albany, Ore., Jan. 7-10, 1915, E. Schoel, secretary, Albany.

Tacoma, Wash., Dec. 29-Jan. 2, 1915, J. A. Caddey, secretary.

Certain of the Chinese in the interior districts adjacent to Amoy employ an ingenious method for hatching both hens' and ducks' eggs. The breeder first takes a quantity of unhusked rice and roasts it, cooling it down by fanning or allowing the wind to blow through until it is lukewarm. He then spreads a three-inch layer of the rice in a wooden tub and places about 100 eggs thereon; another layer of rice, this second and subsequent layers being but two inches in thickness, is spread over the eggs. Each tub will have six layers of rice and five layers of eggs, so that there will be 500 eggs in each tub. The rice is heated once every 24 hours, the eggs being taken out at such times. When the eggs are again put in the rice the bottom layer is placed on top, and each of the other layers one row lower down, while the eggs previously in the center of the tub are placed at the edge. The entire tub is covered with a cotton mattress. One of the great difficulties with this method is the inability to tell just when the eggs will hatch, which, of course, renders the smothering of the young ones very possible.

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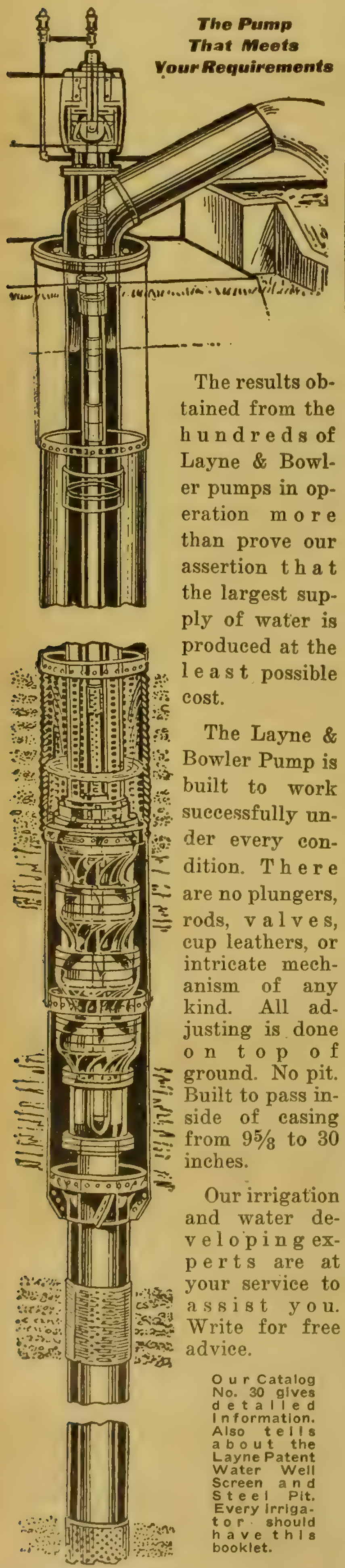

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Questions and Answers

THE EDITOR AND STAFF

Questions to be answered in this department should be received at this office one week before reply is expected. Write plainly on one side of the paper and sign full name and address. Unsigned communications receive no attention.

Cotton Seed Meal for Hogs

We have daily, say 2000 pounds whey from our cheese factory which is fed to our hogs. They have also the run of an alfalfa pasture. We can buy cottonseed meal at $20 per ton. How much of this meal could we safely mix with each 100 pounds of whey and what results may we expect by feeding this meal?

Great care must be exercised in feeding cottonseed meal to hogs. Many will not feed it at all because of the danger of poisoning. Would refer inquirer to article in the Cultivator of July 9, 1914, page 38, in which this matter was discussed and methods given for successfully feeding the cottonseed meal. However, proceed with the greatest caution.

Nematodes and Wireworms

One question which almost every orchardist or gardener must face is that of wireworms and nematodes. We have asked Mr. J. E. Graf, connected with truck crop and stored product insect investigations of the bureau of entomology of the U. S. department of agriculture, to give us something as to treatment of these pests. He gives the following information:

"Concerning the damage done to beans by nematodes and wireworms, I will say that there is no specific remedy known for either of these pests, and as you state nothing concerning the size of fields affected, amount of infestation and damage due to each pest you mention, it is difficult to give the approximate remedies. However, I can state that if most of the damage is due to nematodes and the field is generally affected by these, the safest thing would be to rotate, planting preferably some non-susceptible crop. I presume the nematode is Heterodera radicicola, and the list of the non-susceptible plants may be found in Bulletin 217, bureau of plant industry, U. S. department of agriculture. In case the infestation occurs only in spots, and the field is large, beans may yet be grown with profit, and the question whether or not to continue planting beans or to rotate with other crops is a matter which could be best judged by the grower. In the case of wire worms, the injury varies so from year to year that most of the growers prefer to keep planting beans and take a chance on getting a fair crop. Where this is done the beans are planted extra thick, and while the wire worms may thin them out considerably, there is still a chance of growing a crop which will pay. The wire worms may be partially controlled by clean cultivation and the destruction of weeds in field between crops."

Leaf Spot of Alfalfa

A subscriber at Long Beach brings in stems of alfalfa badly affected with fungus. When less than half grown the fungus attacks the leaves of alfalfa so seriously that growth is stopped and leaves soon drop so that the entire crop is lost. Seed was also submitted. All of which was sent to Prof. H. S. Fawcett of the pathological laboratory at Whittier, and he writes:

"The specimen of alfalfa which you sent in a day or two ago is affected with a rust and leaf spot fungus. It is probable that the unusually moist, cool weather of this year has encouraged the spread of this fungus. I am wondering what variety this is, whether or not it is the Arabian. I should think that the disease might largely disappear as the weather becomes dryer."

However, the grower of the alfalfa informs us that this is the Chilean or common variety.

Canker

What appears to be a small ulcer on the pupil of a chicken's eye grows larger rapidly until the pupil is covered. Appears to be painful. One chicken had it on both eyes and others only on one. Is it contagious and what is the treatment? These are young chickens, four months old. Two were sick six weeks ago and the third has just developed the trouble. They were separated as soon as the trouble was discovered. — Subscriber, Lemon Cove.

This looks like a sort of canker that is sometimes caused by mold germs getting into the eyes from the food or scratching litter, and it might possibly come from a bit of weed or some foreign substance that is irritating the eye. I should look for mold and also examne the eye to see if anything is in it. To treat the affected eye, try a sulphate of zinc solution (one grain of sulphate of zinc to two tablespoons of water). Drop one drop in the eye once a day for three days. I hardly think this can be anything contagious, but it is always wise to isolate sick brds.—J. A. K.

Crown Gall

I have a peach tree about five years old, the roots of which, just below the surface, are almost entirely surrounded by thick, pithy galls resembling rotten wood, which crumbles away in little chunks when struck with the hoe. Can you tell me what the trouble is and how to overcome it?—Subscriber, Los Angeles.

This is the common crown gall, bacteria tumefaciens, which is a serious proposition with the peach and many other trees. It forms a great mass around the crown of the tree, or sometimes attaches to smaller roots. If the knot is chiseled away with a sharp tool, leaving only healthy wood, which is then painted with Bordeaux paste or a copper solution, and the tree is watched to give treatment for later attacks, it is possible it may be saved. It is very hard to control, however, and with very young trees the safest method is to remove entirely. Care should be taken that no nursery tree is planted which shows this disease.

Preventive of Chicken Pox

Is there anything to give chickens as a preventive for chicken pox that may be fed in the drinking water?—Subscriber, Raisin.

Dr. N. W. Sanborn, than whom there is no better authority on poultry diseases, prescribes calcium sulphide both as a preventive and as a cure for chicken pox. Use one grain per day for each grown fowl in your flock. Do not give in water, but mix well into a wet mash and feed once a day. Calcium sulphide is a drug which often loses its strength when it is kept for a time. See that you get a heavy, strong-smelling drug if possible. If it seems weak you will have to use two or three grains instead of one. Continue the dose once a day till your sick birds begin to improve and those that have been exposed have passed the time for developing the disease.—J. A. K.

Aphis

I planted broad beans, which are now in bloom, but the plants seem to be dying, the leaves being covered with black insects which look like tiny flies. I send leaf with the insects. Am told the vines need spraying. What material should be used?—Subscriber, Chula Vista.

So far as can be determined from the leaves, this is simply a bad infes-

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tation of aphis, of which there are many kinds. This is probably the common bean aphis—aphis rumicis. They are all easily destroyed by the simpler sprays, such as kerosene emulsion, tobacco extract, soapsuds, or even water under high pressure. But though today's generation may be nearly all destroyed, tomorrow's will appear to be even greater, so it is a matter of perseverance. A pound of tobacco stems steeped in a gallon of water and diluted to four gallons is sufficiently strong to destroy them, or perhaps a simpler remedy is to use a good tobacco extract, which may be purchased of any seedsman, and used at the rate of about one pound to 100 gallons. For further particulars would refer the inquirer to the Cultivator of September 11, 1913.

Woodlake

If "Woodlake," who sends query from Woodlake, will repeat inquiry and send full name, it will be referred to the legal department for answer. We will not use the name in the paper, but it is a rule that unsigned communications will not receive attention. We presume in this case the attorney will simply answer to the inquiry presented, "No."

Stock for Apricots

Is it all right to bud on apricot roots?—Subscriber, Anaheim.

We assume that the subscriber refers to apricot buds. Many prefer the apricot root, others prefer peach, while some consider the plum root best, especially the Myrobalan. The reason for the different preferences is that different soil conditions demand different stocks. If for very cold soil, then the Myrobalan stock is best; for the lighter, loamy soil the peach, or often the apricot, is preferable.

Pendulous Crop

We have a flock of young turkeys hatched in April. Since midsummer four or five of them have had enlarged crops, which have seemed to grow larger steadily. We operated on one, cutting a hole into the crop and draining it of more than a pint of water. We afterward sewed up the incision, but it seems that the crop filled quicker than before. Turkeys afflicted seem to be free from pain, but are handicapped in walking and running. They have had no feed save green alfalfa and curd, and oat stubble field to run in.—Subscriber, Allensworth.

Enlarged or pendulous crop in young turkeys is usually explained as the result of irregular feeding or of overdistention of the crop by overfeeding in some particular instance, but it seems to me the trouble with your turkeys may be the lack of hard grain. All fowls need a good deal of hard grain, and I doubt if yours have found enough in the oat stubble field. Failing to get enough grain, they would naturally stuff their crops with green alfalfa, and would perhaps overdistend them in this way. I always feel my turkeys' crops when they come for their supper, and govern the amount of wheat I give them accordingly. I want the crop to feel hard and well filled when they go to roost. Some breeders recommend a dose of baking powder for cleansing and sweetening the crop in such cases. Give about half a teaspoon in water enough to make it easy to swallow, then try bandaging the crop quite firmly with soft cloth wrapped several times about the neck. I have never had occasion to try this, but it is said to be the easiest way to manage these cases. Give a good feed of wheat at night to give the muscles of the crop a chance to exercise, and plenty of grit and charcoal.—J. A. K.

Grapes Not Ripening

I have grape vine, Rose of Peru variety, on which the grapes did not ripen. Have given plenty of water and fertilizer but there are now ripe, half ripe and green grapes all on the same stem. What is the cause?—Subscriber, Earlimart.

Mr. J. W. Mills suggests that evidently the trouble with these grapes is they have been given too much water.

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For Sale—50,000 Sour Orange seed bed stock, fine quality, or will let to responsible party on percentage basis; also 2000 A1 late Valencias, two years old next spring, or might exchange for Washington navels. H. H. Eshelman, Soldiers' Home, Cal.

Olives are our specialty. We propagate only the two best varieties. Broad Leafed Mission, and an early heavy bearing strain of Manzanillos. If you want fine thrifty trees, quality and price will do business for us. Exeter Nurseries, Exeter, Cal.

The Walnut Nursery has a fine lot of grafted walnut trees again this season, Chase, Eureka, Mayette and Placentia Perfection. Order now and get the best. W. A. Litten, Prop., R. F. D. No. 2, Whittier, Cal. Home phone 7863.

Walnut Trees—Eureka and El Monte varieties a specialty, also Franquette and Placentia. Write for prices and description of stock. Personal inspection invited. Eureka Walnut Nursery, Montebello, Cal.

Potrero Heights Walnut Nursery—Placentia Perfection Walnuts a specialty. Native Black Walnut roots. Get my prices and order early. Address, A. H. Jessup, San Gabriel, Cal., Route 2.

The 1200-Acre Nursery, growers of 1500 varieties of trees and plants. OREGON NURSERY CO., Orenco, Oregon. Sales office, 522 Chamber Commerce, Los Angeles, Cal.

Budded Avocados—All the best varieties Feijoa, Cherimoya, Mango, and other rare plants. Special prices. Catalogue free. Semi-Tropic Nursery, Box 838, Monrovia, Cal.

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1000 Avocado Seedlings—Pots, also can furnish nice plants, bare root, at low price. A. A. Quint, R. D. No. 2, Pasadena, Cal.

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Citrus Nurseries, Murphy Oil Company, East Whittier, California. Selected stock for sale; inspection invited.

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Budded Citrus Trees and seedlings at fair prices. Will take auto or land. Butler's Morning Side Nursery, P. O. Box 145, Lamanda Park, Cal.

LIVE STOCK

Ohio Improved Chester White—(O. I. C.); entire herd immunized against hog cholera. Nothing but immunized stock sent out. Few spring boars left. Few June gilts. One August litter will be ready to ship the middle of October. October farrows will be ready December first. Make reservations now for first choice. All stock first class in every respect. C. B. Cunningham, Mills, Sacramento County, California.

Grape Wild Farm Thoroughbreds—Guernsey Bulls of A. R. Breeding. BERKSHIRE HOGS. Finest herd in the state. All ages for sale. A. B. Humphrey, proprietor. Mayhews, Sacramento Co., California.

Thoroughbred Chester Whites, $15.00 at weaning time, also two March and three June farrowed boars. Dallas Bache, R. D. No. 2, Hollister, San Benito County, Cal.

For Sale—Young registered Berkshire boars and sows; fine strong stock; boars ready for service. Stanislaus Ranch Co., Crows Landing, Calif.

Thoroughbred Berkshire Boars of all ages from developed and large-boned hogs. Riccomi Bros., Mountain View, Cal.

Thoroughbred Doroc Jerseys for sale. Address Box 543 Lomita Rancho, San Jacinto, Cal.

Glenview Poland China—Stock for sale. Chas. R. Hanna, R. F. D. No. 3, Riverside, Cal.

M. H. Locke Co., Lockeford, Cal.—Choice young Jersey bulls for sale.

MISCELLANEOUS

Free for Six Months—My special offer to introduce my magazine "INVESTING FOR PROFIT." It is worth $10 a copy to anyone who has been getting poorer while the rich, richer. It demonstrates the REAL earning power of money, and shows how anyone, no matter how poor, CAN acquire riches. INVESTING FOR PROFIT is the only progressive financial journal published. It shows how $100 grows to $2200. Write NOW and I'll send it six months free. H. L. Barber, 430, 28 W. Jackson Blvd., Chicago.

For Exchange—Holt steam tractor, original cost $3000; steel road roller, large insilage chopper. Trade for auto equal value. Demmitt Company, 120 North Main street, Los Angeles, Cal.

"Smith's Pay the Freight"—To reduce the high cost of living, send for our Wholesale to Consumer Catalogue. Smith's Cash Store, 112 Clay St., San Francisco.

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State, Indian and government land. Write for booklet. The California State Land Information Bureau, Sacramento.

Beekeeping Pays Big—Price list, bees, instruction books, etc. free. Spencir Apiaries Co., Box 14, Nordhoff, Cal.

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For Sale—Save you half. Material Guaranteed. Used Windmills, Tanks
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6 Gang Tractor Plow, Disc Plows, Harrows, Cultivators
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Save 30 Per Cent and Freight
1000 Gallons, $19.50; 2000, $29.50
100 Shovels, 15 cents; Picks, Mattocks, Post Hole Diggers, 50 Cents; Hay Rake Teeth, 100 Sickles Tons
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For Sale—One American Grain Separator Co.'s Bean and Pea Thresher No. 13, used two weeks; good as new. $75.00 F. O. B. car. Address F. G. Wells, Campbell, Cal.

FARM LANDS FOR SALE

VICTORIA, AUSTRALIA, WANTS SETTLERS

Special inducements; government land railways, two schools; cheap irrigation 31 years to pay for farms adapted to alfalfa, corn, grains, fruit, etc.; climate like California, ample markets. reduced passages; special excursion being arranged Free particulars from F. T. A. FRICKE Government Representative from Victoria, 687 Market St., San Francisco, Cal., Box X.

For Sale—Deal direct with owner, an excellent 44⅔-acre fruit farm, splendid location, a great bargain if taken before Oct. 24th, part trade, part cash, terms on balance. Enquire Box 58, R. F. D. No. 1 Redding, Cal.

For Sale—or rent, on shares or for cash, on Grisby Island, Solano Co., Cal., 1200 acres of fertile grain or bean land. Also 270 acres for grain; also 1000 acres for pasture. Address owner, F. M. Chaplin, Dutton's Landing, Solano Co., Cal.

Wanted—Position by single man as working foreman for orange or lemon grove. Expert in budding and pruning. 22 years experience. References furnished. Address, Box W, Cultivator Office, Los Angeles, Cal.

Free "True Blue" 1915 Booklet tells the "How," "Why" and "Where" of overlooked State and Government land bargains. Write California State Land Information Bureau, Sacramento.

Apple Orchards—Large and small, in the only apple producing section in California. The greatest section west of Missouri River. Write for booklet. Geo. W Sill & Co., Watsonville, Cal.

Ranches, homes, acres, lots, exchange send for free list. Wilson Bros., Santa Cruz.

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Wanted—Middle aged man experienced in all kinds of deciduous fruits, desires position as foreman on ranch. Moderate salary; best of references furnished. Address P. M. Y., 1611 So. Grand Ave., Los Angeles, Cal.

Wanted—By married man, position on ranch. Capable of doing any sort of ranch work. Expereinced. Open after October 1st. Address, giving salary and sort of work, F. A. R., P. O. Box 567 Oakland, Cal.

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How to Make Money—Mrs. A. Basley's latest Poultry Book is without exception the best ever written. The secret of how to raise every turkey hatched and the "Basley Formulas," now published for the first time, are worth many times the price of the book. The "Western Poultry Book" is a practical book by a practical woman. Price, $1. Order from Cultivator Publishing Co.

Poultry Wanted—We pay the highest market price for all the local poultry we can get, no matter how large the quantity; also fresh ranch eggs. We remit immediately. National Poultry Co., successors to Allaway & Layton Co., 607 E. Third St., Los Angeles, Cal.

Wild Mallard Ducks, hand-raised for two generations; very gentle; will not migrate. Suitable for propagation and live decoys, $5 per pair; also Jap. Silkies, blue-ribbon stock, for quail and pheasant breeding, $5 per pair. Kellogg Orange Acres, East Bakersfield.

Baby Chicks—After Oct. 1st., White Minorcas, a very popular breed for all purposes. Golden Buff Leghorns—are fowls of beauty as well as heavy layers—all fall and winter chicks, $15.00 per 100; quality guaranteed. Sand Ridge Hatchery, Kerman, Cal.

Increase Your Heavy Layers—Introduce 230-egg type cockerels from trap-nested White Leghorns and get results. Four months old, 60 cents each. O. C. Hudson, R. D. No. 2, Escondido, Cal.

Barred Rock Cockerels—(Hawkins Royal Blue Strain) ready for mating, also Barred Rock, R. I. Red, Buff and White Orpington day-old chicks every week. Enoch Crews, Santa Cruz, Cal.

Rhode Island Red baby chicks from heavy laying strain of fast-growing hens, they lay a large egg and lots of them. J. W. Lyon, Gardena, Cal.

White Leghorn baby chicks, McFarland strain, there is nothing to be had any better than this strain. J. W. Lyon, Gardena, Cal.

We have some fine Barred Rock Cockerels for sale at low prices, also a few Brown Leghorns cheap. G. L. Hawley, Madera, Cal.

Barred Plymouth Rocks—"None better." Special prices for May and June. Write for 'em. C. H. Vodden, Los Gatos, Cal.

Plymouth Rock baby chicks from strong, vigorous hens, two-year-old and great layers. J. W. Lyon, Gardena, Cal.

SEEDS AND PLANTS

Grow Sudan Grass—The new forage crop—endures drouth, yields heavy, excellent in feeding value. Plants rogued and seed personally inspected by experiment station officials. The supply this year is limited. Seed one dollar per pound. B D. Short, Rhome, Tex.

For Sale—A limited amount of White Tepary beans 15c lb., 100 lb. lots at a reduction. Dr. Geo. P. Clements, Buena Vista Rancho, Riverside, Riverside Co., Cal.

Berry Plants, Rhubarb, Cacti—It will be worth your while to send me a postal right now if you are interested. Louis C. Scribner, R. 2, Pasadena, Cal.

For Sale—500 Cuttings Burbank Spineless Cactus, $10.00 per hundred; must be sold. Make an offer. Edgar Woolridge, Lakeport, Lake Co., Cal.

Thornless Cactus Slabs for sale at 5 to 15 cents each. Chas. R. Hanna, R. D No. 3, Riverside, Cal.

RABBITS

New Zealand Reds—Scored and sold on merit. Investigate. Our catalog is free. Caldwell Bros., Los Angeles, Cal. Box 613.

LABOR SAVERS

Notwithstanding milking machines and other appliances are greatly reducing labor, or making labor more effective in dairying, there is still opportunity for the use of many other labor saving appliances in the dairies of California and fortunately the need is being met by inventive genius and with improved stanchions, feed carriers, litter carriers and other appliances, and large dairies employ less men than formerly. This is fortunate and leads to greater profit to the dairyman. One of the most helpful catalogs we have seen along this line is furnished by the Louden Machinery Company, Fairfield, Iowa, and while expensively and beautifully gotten up we doubt not it will be sent to any dairyman for the asking.

GOLD MEDAL

The Tribble Nursery Company at Elk Grove, Sacramento County, has pardonable pride in the fact that it took home the gold medal and $25 in cash for best display of cultivated nuts at the recent state fair. It was truly a fine showing of 162 varieties of nuts, many of which were grown on the lands of the Tribble Nursery Company. The Cultivator endeavored to secure a photo of the exhibit, for it was well worth reproduction, but owing to poor lighting conditions the photo was not clear enough for engraving purposes.

In addition to the medal and first premium on display the same company won first on best three varieties of walnuts; first and special mention (Gold Medal) on pecans; second on best filberts and second on best chestnuts.

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IF you have a daughter of the "high school" age, we believe that she will receive definite advantages by studying this fall at Cumnock Academy.

The reasons for our belief can be given in a personal interview; our representative will be glad to call on you in your home, or will talk with you at the school.

The Cumnock Academy offers four years of work preparatory for college; and four years of liberal education for those who do not wish to go to college. It also offers courses in the seventh and eighth grades which prepare students for Academy or High School. A faculty of ability and experience aids the students in realizing the ideals of the school scholarship and that general culture which is the outward manifestation of refined and educated womanhood. Every student in the Cumnock Academy has the advantage of courses given by the faculty of the *Cumnock School of Expression.*

The Fall Term is just commencing; send for terms and particulars. Send, too, for our portfolio of views; mailed on request. Address Dept. B.

The Cumnock Academy
Figueroa at Fifteenth

The Household Department

A MOTHER'S PRAYER

I hear the blaring bands go by; I hear the marching feet;
All day they drum their dreadful dirge along the dusty street.
I hear the crowds give cheer on cheer of fierce delirious joy,
And wonder if they see him there, my little baby boy.
A baby only yesterday, with soft and sunny hair,
So helpless and so innocent; so fragile and so fair!
So strong I felt to shield him then, safe sheltered in my arm;
It seemed to me the whole wide world could never do him harm.
And oh, the long, long nights I watched beside his trundle bed
To fight away the pain that racked his little fevered head.
I fought his battles for him then; he leaves my side today
To fight far greater ones alone, and oh! so far away!
The little dimpled hand that lay so trustingly in mine
Must grasp a rifle barrel soon along the firing line.
My baby boy I held so close I felt his fluttering breath
Has left me empty-armed and gone to see the face of death.
And never mother's voice to soothe nor mother's arm to shield
From all the direful perils of the smoke-hung battlefield!
Oh, why must mothers stay behind? Is not a mother's place
Beside the baby that must look in Death's remorseless face?
The years have wrought a change in him that only others see—
For all his soldier uniform he's still a boy to me,
Sent forth to kill, he knows not why, a king's insensate toy,
While I must wait and pray at home—my baby, baby boy!

—James Montague.

WHEN THE GERMANS ENTERED BRUSSELS

By Richard Harding Davis in New York Tribune

The entrance of the German army into Brussells has lost the human quality. It was lost as soon as the three soldiers who led the army bicycled into the Boulevard du Regent and asked the way to the Gare du Nord. When they passed the human note passed with them.

What came after them, and 24 hours later is still coming, is not men marching, but a force of nature like a tidal wave, an avalanche, or a river flooding its banks. At this minute it is rolling through Brussels as the swollen waters of the Conemaugh Valley swept through Johnstown.

At the sight of the first few regiments of the enemy we were thrilled with interest. After, for three hours, they had passed in one unbroken steel-gray column, we were bored. But when hour after hour passed and there was no halt, no breathing time, no open spaces in the ranks, the thing became uncanny, unhuman. You returned to watch it, fascinated. It held the mystery and menace of fog rolling toward you across the sea.

The gray of the uniforms worn by both officers and men helped this air of mystery. Only the sharpest eye could detect, among the thousands that passed, the slightest difference. All moved under a cloak of invisibility. Only after the most numerous and severe tests at all distances, with all materials and combinations of colors that give forth no color, could this gray have been discovered. That it was selected to clothe and disguise the German when he fights is typical of the German staff in striving for efficiency to leave nothing to chance, to neglect no detail.

After you have seen this service uniform under conditions entirely opposite, you are convinced that for the German soldier it is his strongest weapon. Even the most expert marksman cannot hit a target he cannot see. It is a gray-green, not the blue-gray of our Confederates. It is the gray of the hour just before daybreak, the gray of unpolished steel, of mist among green trees.

I saw it first in the Grand Place in front of the Hotel de Ville. It was impossible to tell if in that noble square there was a regiment or a brigade. You saw only a fog that melted into the stones, blended with the ancient house fronts, that shifted and drifted, but left you nothing at which you could point.

Later, as the army passed below my window, under the trees of the Botanical Park, it merged and was lost against the green leaves. It is no exaggeration to say that at a hundred yards you can see the horses on which the Uhlans ride, but cannot see the men who ride them.

If I appear to overemphasize this disguising uniform it is because, of all the details of the German outfit, it appealed to me as one of the most remarkable. The other day, when I was with the rear guard of the French dragoons and curassiers, and they threw out pickets, we could distinguish them against the yellow wheat or green copse at half a mile, while these men passing in the street, when they have reached the next crossing, become merged into the gray of the paving-stones and the earth swallows them. In comparison, the yellow khaki of our own American army is about as invisible as the flag of Spain.

Yesterday Major-General von Jarotzky, the German military governor of Brussels, assured Burgomaster Max that the German army would not occupy the city, but would pass through it. It is still passing. I have followed, in campaigns, six armies, but, excepting not even our own, the Japanese or the British, I have not seen one so thoroughly equipped. I am not speaking of the fighting qualities of any army, only of the equipment and organization. The German army moved into this city as smoothly and as compactly as an Empire State express. There were no halts, no open places, no stragglers.

This army has been on active service three weeks, and so far there is not apparently a chin-strap or a horseshoe missing. It came in with the smoke pouring from cookstoves on wheels, and in an hour had set up post-office wagons, from which mounted messengers galloped along the line of column distributing letters, and at which soldiers posted picture post-cards.

The infantry came in in files of five, 200 men to each company; the lancers in columns of four, with not a pennant missing. The quick-firing guns and field-pieces were one hour at a time in passing, each gun with its caisson and ammunition wagon taking 20 seconds in which to pass.

The men of the infantry sang "Fatherland, My Fatherland." Between each line of song they took three steps. At times 2000 men were singing together in absolute rhythm and beat. When the melody gave way, the silence was broken only by the stamp of iron-shod boots, and then again the song rose. When the singing ceased the bands played marches. They were followed by the rumble of siege guns, the creaking of wheels, and of chains clanking against the cobblestones, and the sharp, bell-like voices of the bugles.

For seven hours the army passed in such solid column that not once might a taxicab or trolley car pass through the city. Like a river of steel it flowed, gray and ghostlike. Then, as dusk came and as thousands of horses' hoofs and thousands of iron boots continued to tramp forward, they struck tiny sparks from the stones, but the horses and the men who beat out the sparks were invisible.

At midnight pack-wagons and siege guns were still passing. At 7 this morning I was awakened by the tramp of men and bands playing jauntily. Whether they marched all night or not I do not know; but now for 26 hours the gray army has rumbled by with the mystery of fog and the pertinacity of a steam-roller.

RUSSIAN FEDERATION OF FARM WOMEN'S ASSOCIATIONS

Of late years farm women's associa-ions have arisen in increasing num-ers, first in the provinces of East russia and then in Schleswig-Hol-tein. Their aim more especially is to nstruct their members in domestic conomy, to engage in the sale of do-nestic rural products and to provide, by means of the establishment of shops in cities, good and fresh food supplies for families in urban centers; in fact, to equalize the advantages of city and country.

The women's associations in the four provinces of East Prussia, West Prussia, Pomerania and Schleswig-Holstein have already formed themselves into provincial federations, and in other provinces they will soon take similar steps.

At an assembly held in Berlin February 17th, 1914, on the initiative of the "Prussian Royal College of Rural Economy," at which there were present representatives of the four provincial federated societies, and of those farm women's societies of provinces in which there are not yet federations, and also delegates from the chambers of agriculture concerned, it was decided to establish a "Prussian Federation of Farm Women's Associations."

The federation proposes to form a central institution for the work of the provincial federations among the agricultural housewives' associations, and to act as their representatives, especially in regard to:

Courses for the completion of the education of housewives in domestic matters.

Course of domestic economy for girls.

Increase in profits from domestic economy and facilitation of sales of produce.

Supply of fresh food to families in the cities.

Encouragement of fruit growing and horticulture, bee and poultry keeping, on scientific principles, as well as other branches of domestic economy.

Struggle against the exodus from the country to cities, maintenance of family life among agricultural laborers by the creation of profitable household industries; the provision of lucrative, independent, agreeable work for women indoors, or in the cultivation of vegetables and flowers, and provision that women agricultural laborers may have opportunites of sharing in the advantages of the farm women's associations.

THE POTATO AS FOOD

Written for the California Cultivator
By Sacramento Valley Contributor

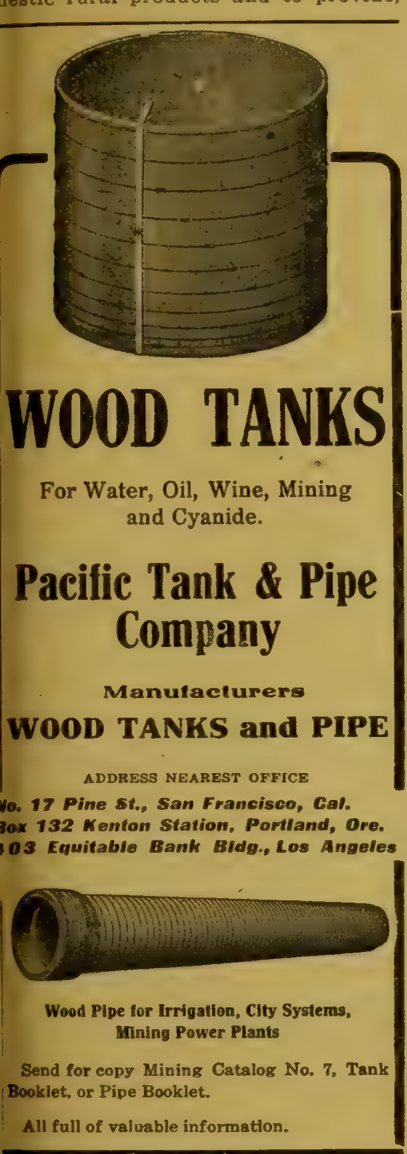
"Potatoes are given to young children as one of the first solids they can take because the starch of the potato is one of the most easily digested foods we have," said Professor Jaffa, of the University of California, at the banquet given to the West Coast Potato Growers' Association by the Stockton Chamber of Commerce, at Hotel Stockton, September 26, 1914. He was discussing the potato as a food for man and beast, and brought out many valuable facts that were new to the potato growers and experts present.

Because the starcn of the potato is so soluble and digestible, potato flour is used by leading chefs for making soups and gravies, and in many other places where wheat flour is ordinarily used.

Not only is the starch of the potato a most valuable food, but the tuber contains a comparatively high percentage of vegetable salts which are of great use in the building and replenishing of bone and tissue. Prominent among the elements contained in these salts are potassium and phosphorus. In comparison with the grains the dry matter of the potato contains many times as much of these vegetable salts as there is in wheat or barley.

Dr. J. H. Kellogg, of the Battle Creek Sanitarium, in Michigan, a leading authority on foods and their relation to health, includes a large quantity of potatoes in the ration of all patients taking treatment.

In order to retain all of the food value of the potato care should be used in peeling it, some of the richest part of the tuber being in that part next the skin. A thick peeling removes a per cent of nutritive value greater than the comparative amount in weight because of the more fibrous and watery texture of the center of the potato. Boiling or baking potatoes with their "jackets" on is a good way to retain all of the food value and delicious flavor.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Cooking is so important!

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The Majestic provides perfect baking qualities, plus fuel-saving and work-lessening features that you cannot get in ordinary ranges. The little extra it costs is more than repaid by the years longer wear that it gives.

The health and happiness of your whole family is effected by the range you buy. Investigate **thoroughly.** There is a Majestic dealer in every county of 40 states; if you don't know the one near you, ask us, and get "Range Comparison" explaining Majestic ranges fully.

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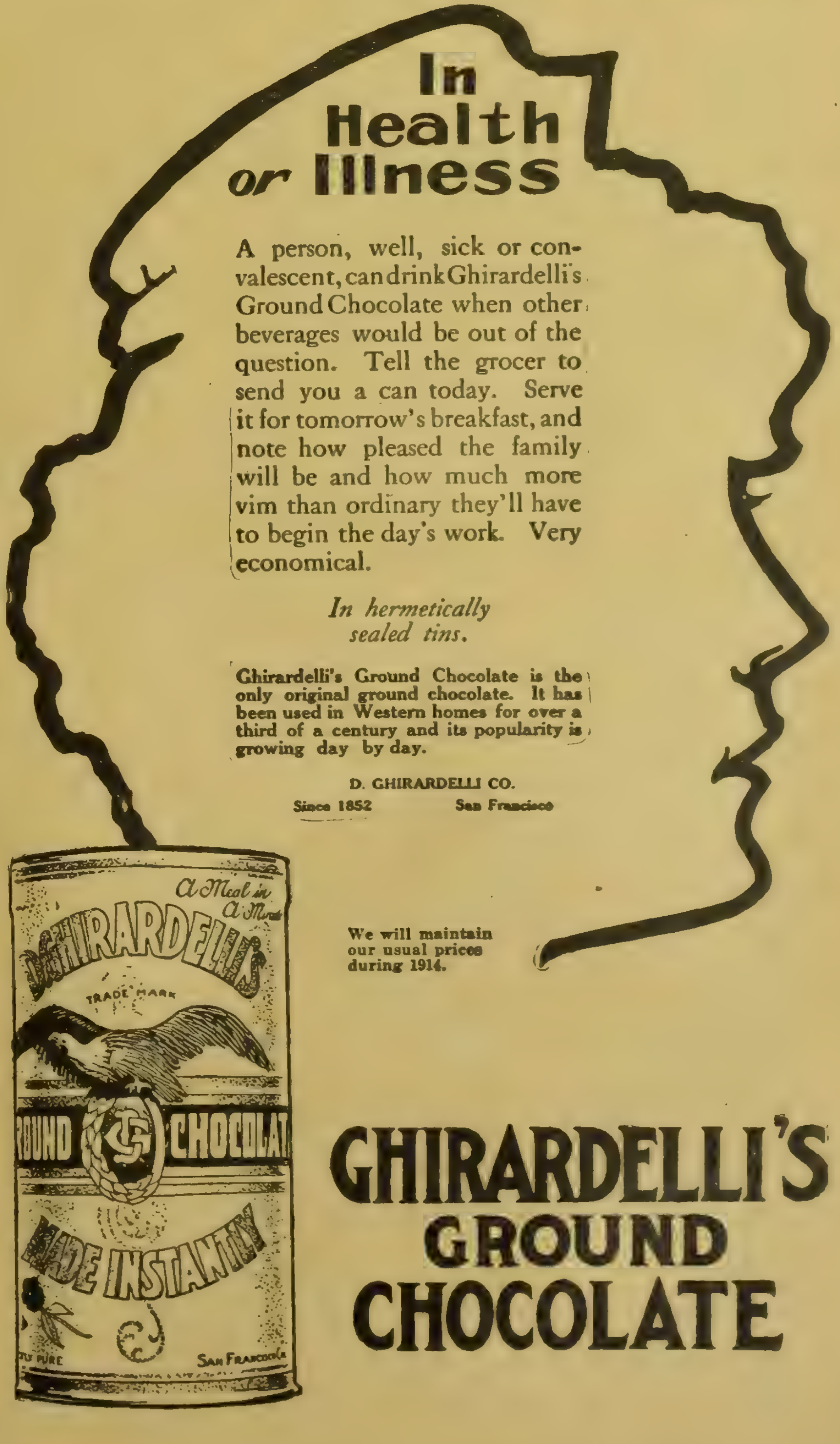

In
Health
or Illness

A person, well, sick or convalescent, can drink Ghirardelli's Ground Chocolate when other beverages would be out of the question. Tell the grocer to send you a can today. Serve it for tomorrow's breakfast, and note how pleased the family will be and how much more vim than ordinary they'll have to begin the day's work. Very economical.

In hermetically sealed tins.

Ghirardelli's Ground Chocolate is the only original ground chocolate. It has been used in Western homes for over a third of a century and its popularity is growing day by day.

D. GHIRARDELLI CO.
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We will maintain our usual prices during 1914.

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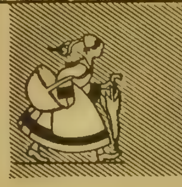
CHOCOLATE



San Francisco-Los Angeles Produce Markets

Los Angeles Market

LOS ANGELES, Oct. 7, 1914.

The pries given below, except where otherwise noted, are those made by wholesale or commission houses to retailers, and are intended to give producers the range of the market rather than an indication of prices which they will secure. Jobbers' quotations to producers are not given.

BUTTER

Light receipts of butter is causing increase in quotations. Market very firm, with greater increase promised. Quotations are not as high as last year at this date.

Prices to trade 4 cents above following quotations:

Creamery Extras	.31
Firsts	.26@27
Country	.24
Ladle	.22

EGGS AND POULTRY

Eggs are still advancing. Northern stock shows greatest advance during the week.

Prices to trade 3 cents higher than following quotations:

Fresh ranch, case counts	.40
Candled	.42@43
Northern Case Count	.43
Petaluma-Santa Rosa	.44

Prices to producers:

Hens, lb.	.14@19
Roosters, old	.9
Broilers, lb.	.21
Fryers	.18
Roasters, lb.	.17
Turkeys	.16@24
Ducks	.14
Geese	.14
Squabs, doz.	.2.00

LIVE STOCK

The following quotations are f. o. b. Los Angeles on all stock:

Hogs, 175 to 200 lbs., per cwt.	.8.50
Prime Steers	.7¼@7½
Heifers	.6¼@6½
Calves, lb.	.8½
Sheep—	
Ewes, head	.4.00
Wethers	.4.25@5.00
Lambs, head	.4.50@4.75

POTATOES

Wholesale selling price:

Sweets, sack	.1.35@1.45
Northern Burbanks, cwt.	.1.30@1.40
Salinas	.1.90@2.00
Shimas	.1.45@1.55
Lompocs	.1.90@2.00

ONIONS

Wholesale selling price:

Australian Brown, cwt.	.90@1.00
Silverskins, cwt.	.2.00@2.25
Garlic	.13@15

VEGETABLES

Wholesale selling price:

Artichokes, Northern, doz	.40@90
Beets, doz.	.30@35
Beans, String	.6@8
Cabbage	.60@65
Carrots, doz.	.30@35
Cauliflower, doz.	.60@70
Celery, doz.	.50@60
Corn, Sugar, box	.60@65
Field corn, sack	.1.60@1.65
Cucumbers, lug	.35@45
Pickling, lug	.1.20@1.35
Egg Plant	.3½@4
Escarole, doz.	.40
Horseradish, lb.	.13@15
Leeks, doz.	.35@40
Lettuce, crate	.95@1.15
Mint, doz.	.35@40
Okra, lb.	.7@8
Onions, Green, doz. bunches	.15@20
Oyster Plant	.30@35
Parsnips, doz.	.30@35
Peas, lb.	.3@7
Peppers—	
Bell, lb.	.3@4
Chili, lb.	.2@3
Pumpkins, lb.	.2@3
Radish, doz.	.20@30
Rhubarb, box	.90@1.00
Spinach, doz.	.20
Squash—	
Summer, lug	.30@35
Crookneck	.30@40
Hubbard, lb.	.1½@2
Turnips	.30@40
Tomatoes, lug	.40@50

FRESH FRUIT

Wholesale selling price:

Apples—	
Banana Apples	.1.00@1.15
Bellflowers	.70@90
Jonathans	.1.25@1.35
Spitzenburgs	.65@90
King Davids	.1.25@1.35
Crabapples	.1.00@1.10
Bananas	.3½@4
Berries—	
Strawberries, basket	.4@6
Blackberries, basket	.3@4
Cantaloupes—	
Locals, small	.1.10@1.25
Locals, large	.1.20@1.30
Casabas, doz.	.85@1.00
Cranberries, bbl.	.7.50@8.25
Figs, 1-layer box	.90@1.00
Grapes—	
Black Moroccos	.65@1.00
Cornichon	.90@1.00
Concord	.1.25@1.35
Malagas, crate	.75@90
Muscatels, lug	.75@85
Tokays, lug	.80@90
Guavas, basket	.3@4
Peaches, lug	.90@1.10
Pears, Bartlett, lug	.1.20@1.25
Seckel	.1.00@1.25
Persimmons, lb.	.5@7
Pineapples, lb.	.6@6½
Plums, lug	.1.25@1.40
Quinces	.50@65
Roselle, crate	.80@90
Watermelons, lb.	.¾@1½

NUTS

Prices named by California Walnut Growers' Association are:

No. 1	.16½
Budded Walnuts	.20
Jumbos	.19
No. 2	.12
Culls	.9

Prices fixed by California Almond Growers' Exchange, f. o. b. California.

Almonds—	
Nonpareil	.21
I X L	.20
N P U	.19
Drake's Thinshell	.15
Pecans	.17
Peanuts—	
California, Raw	.6
Japan	.7½
Eastern	.7½
Rice Corn	.5.00@5.25

HAY

Buying prices f. o. b. cars Los Angeles:

Barley	.10.00@11.00
Wheat Hay	.10.00@11.00
Tame Oat	.11.00@13.00
Alfalfa	.9.00@11.00

GRAIN

Wholesale selling prices f. o. b. Los Angeles:

Corn, Yellow	.2.20
Corn, White	.2.30
Wheat	.2.00
Oats, Red	.2.85
Oats, White	1.65
Kaffir Corn	.1.90
Millet	.3.75
Popcorn	.4.75@5.00
Egyptian Corn	.2.30
Barley Seed	.1.45
Milo Maize	.2.00
Cal. Seed Oats	.2.25
Sunflower Seed	.5.25@5.35

FEED STUFF

Wholesale selling prices f. o. b. Los Angeles:

Bran, Heavy	.1.7b
Alfalfa Meal	.1.05
Alfalfa Syrup, per cwt.	.1.05
Beef Scraps	.3.00@3.10
Beet Pulp	.1.25
Cracked Corn, cwt.	.2.20
Cracked Wheat, cwt.	.2.15
Cotton Seed Meal	.1.85
Bloodmeal	.3.60@3.70
Bone Meal	.2.00@2.10
Bone Green	.1.95@2.05
Charcoal	.1.90@2.00
Oil Cake Meal	.2.05
Fish Meal	.3.15@3.25
Rolled Oats	.1.70
Rolled Barley	.1.30
Middlings	.2.00
Oat and Wheat Middlings	.1.55

San Francisco Market

SAN FRANCISCO, Oct. 6, 1914.

The prices given below, except where otherwise noted, are those made by wholesale or commission houses to retailers, and are intended to give producers the range of the market rather than an indication of prices which they will secure. Jobbers' quotations to producers are not given.

BUTTER

Butter advanced soon after last quotations were made and still holds firm at present prices. Receipts about 80,000 pounds daily.

Prices to trade 4 cents above following quotations:

Extras	.29
Prime Firsts	.27
Firsts	.26
Seconds	.24

CHEESE

Wholesaler to retailer.

Oregon Y. Am.	.14@15
California Flats	.10@13
Cheddar	.20
Oregon Twins	.16

EGGS AND POULTRY

Eggs took a jump on Monday and landed on a firm market about 3 cents higher than quoted last week.

Prices to trade 3 cents higher than following quotations:

Extras	.42
Select Pullets	.32
Storage Extras	.32

Price to producer:

Hens	.15@18
Fryers	.20@21
Roosters, old	.12
Roosters, young	.20@22
Broilers	.19@21
Belgian Hares, lb.	.10@11

VEGETABLES

Wholesale selling price:

Beans—	
Wax, lb.	.2@3
Strings	.2@3
Limas, lb.	.2@2½
Brussels Sprouts	.3@4
Cabbage, cwt.	.1.00@1.25
Carrots, sack	.35@50
Celery, doz.	.15@30
Corn, Green, sack	.1.00@1.75
Cucumbers, lug	.25@40
Egg Plant, lug	.25@35
Peppers—	
Bell, lug	.30@40
Chili, crate	.45@60
Rhubarb, box	.60@1.00
Tomatoes, lug	.20@40

FRESH FRUIT

Wholesale selling price:

Apples—	
Bellflowers	.65@75
Crabapples	.25@50
Newtown Pippins	.50@90
Bananas, Hawaiian, bunch	.1.25@1.75
Cantaloupes, crate	.40@1.50
Casabas	.50@75
Cranberries, bbl.	.7.50
Figs—	
Black, double layer	.40@60
White, box, single layer	.25@40
Grapes—Crates	
Black	.25@40
Tokay	.40@60
Seedless	.40@50
Malagas	.35@50
Muscats	.50@60
Huckleberries, lb.	.8@10
Nectarines, crate	.75@1.00
Peaches, lugs	.30@65
Pears—	
Bartletts, wrapped	.1.25@2.00
Bartletts, lugs	.50@75
Winter Nelis, wrapped, box	.1.00@1.25
Other varieties	.35@75
Plums, crate or lug	.75@1.25
Pomegranites	.50@1.25
Pineapples	.1.50@2.00
Persimmons	.50@1.00
Prunes, crate	.60@1.00
Quinces, box	.75@1.00
Raspberries, chest	.4.00@6.00
Strawberries, chest	.2.50@4.00
Watermelons, doz.	.75@2.00

NUTS

ALMONDS—Prices fixed by Almond Growers' Exchange to the trade, f. o. b. California:

Nonpareil	.21
I X L	.20
Ne Plus Ultra	.19
Drakes	.16

Wholesale selling price:

Peanuts—	
Unpolished	.5@8
Polished	.6@6½
Japanese, Shelled	.6¼@6¾
Italian Chestnuts	.6½@7

BEANS

Wholesale selling price:

Limas	.5.00@5.50
Lady Washington	.3.60@3.75
Pink	.3.25@3.50
Black Eyes	.3.75@4.25
Cranberry	.4.00@4.25
Small White	.4.50@4.75
Garbanzos	.6.00@6.25
Large White	.3.85@4.00
Bayou	.5.00@5.50
Manchurian Speckled Bayous	.3.75@4.00
Manchurian Butters	.4.40@4.60
Manchurian Cranberry	.4.00@4.25
Red Mexican	.5.25
Red Kidney	.3.25@4.75
Horse Beans	.2.50@3.25
Bayou, Mexican	.3.75@4.00

HONEY

Comb, Water White	.14@1
Amber	.10@1
Dark	.7@1
Extracted White	.7@
Light Amber	.6½
Dark	.4@5½
Beeswax	.27@3

HOPS

1914

Sacramento Valley	.16½@17½
Sonoma-Mendocino	.18@2
Oregon Clusters	.1

GRAIN

Wheat, Cal. Club	.1.70@1.72½
Corn, Eastern Yellow, blk.	1.82½@1.83¾
Barley, Feed	.1.10@1.12½
Oats, White	.1.55@1.6
Oats, red	.1.40@1.5
Millet	.3@3½
Flax	.5@
Rye	.1.50@1.6
Sunflower	.5@5½

FEED STUFF

Alfalfa Meal, car lots	.11.50@12.5
Bran, ton	.30.00@30.5
Feed Cornmeal, ton	.43.0
Cracked Corn	.43.0
Rolled Barley, ton	.25.00@26.0
Rolled Oats, ton	.37.00@37.5
Middlings	.32.00@34.0
Shorts	.31.00@31.5
Oilcake Meal	.32.00@33.5
Cocoanut Oilcake Meal	.23.00@24.0

WEATHER CONDITIONS

For week ending Oct. 3, 1914.

Report from the various stations of the U. S. Weather Bureau, by Geo. H. Wilson, director, San Francisco:

	Rainfall Data			Temperature Data	
	Past Week.	Seasonal to Date.	Normal to Date.	Maximum.	Minimum.
Eureka	.06	1.74	1.56	60	44
Red Bluff	.00	T	.95	88	46
Sacramento	T	T	.46	88	50
San Francisco	.00	.02	.36	80	52
San Jose	.00	.00	.44	86	42
Fresno	.00	.20	.36	92	52
Independence	.02	.20	.33	78	48
San Luis Obispo	.00	T	.55	80	48
Los Angeles	.18	.19	.09	84	58
San Diego	.68	.68	.09	74	58

T means trace.

Citrus Fruit Market

LOS ANGELES, Oct. 7, 1914.

Possibly about 10 cents better price is being received for good Valencias than last week. Conditions are generally quiet. It now appears that the orchards will be cleaned up of all the old crop by the first or soon after. No definite line is to be had on conditions of Florida fruit, but it will not be long before the new crop will be coming in from that section. There will be bu little shipping from California of new navels before the 10th or 15th of November.

Mediterranean lemons are not being received so liberally as formerly and the market generally is in fair condition.

Shipments

Shipments of oranges to date from Southern California since November 1 1914, 37,480 cars, lemons 2781, total 40, 261. To same date, last season, oranges 13,371, lemons 2169, total 15,540 Same date, two years ago, total all citrus, 31,572.

NEW YORK, Oct. 5.—Twenty-seve cars Valencias sold. Market firm Partly cloudy.

VALENCIAS—	Avg
Aurora, Amer. Ft. Dis.	$2.5
Glendora Alps, A. C. G. Ex.	3.6
Glendora Home, A. C. G. Ex.	2.5
Green Hussar, O. K. Ex.	2.3

PITTSBURGH, Oct. 5.—Three cars oranges, one car lemons sold. Weather favorable.

VALENCIAS—	Avge
Stag, A. C. G. Azusa	$3.1
Pointer, A. C. G. Azusa	2.9
Mill Creek, R. H. Mentone	2.8

BOSTON, OCT. 5.—Eight cars oranges one car lemons sold. Clear and warm Market easier on oranges, unchange on lemons.

VALENCIAS—	Avge
Martha Washington, Or. Tustin	$2.7
Cowboy, Or.	2.7
Volunteer, S. A. Pomona	2.8

PHILADELPHIA, Oct. 5.—Four cars sold. Cool. Four cars Florida grapefruit sold, from 35 cents to $3.90 per box.

CINCINNATI, Oct. 5.—Warm, Marke advancing. Three cars sold.

Deciduous Fruit Marke

CURED FRUIT EXCHANGE BULLETI

SAN FRANCISCO, Oct. 1, 1914.

Business conditions generally throughout the United States are no satisfactory, and the cause of this is the unsettled state of the money market, in consequence of which highe rates of interest are ruling and banks are demanding securities and safeguards for themselves which they di not always ask when times were goo and money plentiful. The federal reserve bank has been assisting loca banks throughout the country, expecting that they in turn would help peopl in their various localities and maintain as low a rate of interest as they reasonably could, but it appears tha many banks, instead of letting this money out to assist their patrons, have been holding it up, which makes the money situation extremely tense. Mr McAdoo, the secretary of the treasury says that if the large amount of loanable funds that is kept from active employment were invested in agricultural or commercial paper, or loaned on proper security, the present situation would be greatly relieved. He also states he is using every just effort to persuade the banks throughout the country to extend reasonable credits at reasonable interest, to meet the existing unusual conditions created by the European war.

While there is plenty of money in the country every one is holding on to it in spite of the efforts of our government to distribute it around, but we feel that eventually our governmen ill bring order out of chaos.

This condition, coupled with the fact iat the German market, which has al- ays been a good consumer of our uit, is now denied us, has had a de- oralizing effect on the fruit market. letter received the other day from ie of our foreign agents states that ieir people would not pay fancy prices r apricots, as they could not afford to iy luxuries.

The apricot market remains about ie same, with possibly fancy and ioice being held a little firmer, but iles are very slow. We are moving iis variety whenever we are able to et a price that we think shows a lit- e profit, but we have not cared to ac- pt prices at which our competitors e selling, feeling that there is a pos- bility of a lighter crop next year and iat the holdover, if any, may bring tter prices.

There is very little interest being iown in peaches, sales being slow. ie southern states, where generally aches have been sold liberally, are iying very sparingly, and only for eir immediate needs, and are not in- ilging in any speculation whatever. iey state that there is very little de- and, as farmers have not been able get money to pay for the harvest- g of their cotton crop, which is one the large crops of the South, and tters are being sent out all over the untry, asking people to buy a bale cotton at 10 cents per pound, and ating that cotton growers would re- ice their acreage one-third for 1915, as not to have an oversupply.

While times are not good in Califor- a (other states are worse off), mem- rs of this organization are moving eir crops and getting their money.

Prunes the last few days are easier, account of advices that the French op has been harvested and is being ld at prices lower than we have been lling for. It is reported that the rench crop is of very good quality id that it will probably aggregate out 1000 cars. We are advised that me cars of French crop have been ld delivered in New York, which fact is caused dealers to hold back on eir orders for California prunes until ich time as the market steadies. We ill later, probably, be able to sell unes to England, but more than like- at prices lower than now being ioted. The freight rate from Bor- aux, France, is only 25 cents per vt. (112 pounds) to England, against e higher rate that we have to pay.

Pears are also in limited demand by iyers, and we are informed that some rge speculators who have contracted uit from growers have refused to ac- pt same when ready to deliver.

The very fact that the dried fruit arket is in such an unsettled condi- on is the strongest kind of a reason hy growers should be more strongly iited than ever, for by being united id working in harmony they are in a isition to safeguard their interests ainst the speculator whose only ob- ct is to buy as low as he possibly n and who cares not for the pro- icer whose capital is invested in the il and who pays the interest of that pital by years of hard work and end- ss worry. The farmers are the hard- t men to get together in a coopera- ve movement because they do not alize that in union there is strength, id the stronger that union, the ronger the farmer becomes, making m the master and not the servant, id until the time comes when they e this, they will be besieged by specu- tors who are anxious to take every issible advantage of them, not car- g whether they make any money or it, so, Brother Farmer, brace up and ht for your rights, which you can- t help but get if you stand together, r might and right cannot fail. Every rmer must learn something of the ull together" spirit, and must also arn to give up something for the mmon good, before we can attain e highest results. As President Van ize of the University of Wisconsin its it:

"If two people agree to cooperate in gard to any matter it means that ch one surrenders some of his free- m. Cooperation means the rule of e majority, and that every man who ins in the cooperation must abide by e conclusions reached; not only this, it the business officers of an associa- on must have delegated to them the cessary power to carry on the af- irs of the cooperative body in the me efficient and authoritative man- r that those do of any ordinary cor- ration.

"In order to have the cooperative ovement succeed, the farmer must ree to circumscribe his liberty in any respects, and, furthermore, must e up to his agreement."

WATER PIPE
CHEAP
200,000 FEET
All Sizes—Immediate Delivery.
Just received several carloads new id second-hand Water Pipe, Oil Well id Water Casing. Water pipe (per ot), ½-inch, 2½c; ¾-inch, 3c; 1- ch, 4c; 1¼-inch, 5c; 1½-inch, 6c; inch, 7c; 3-inch, 15c. O. D. Casing er foot), 2-inch, 6c; 3-inch, 12c; ½-inch, 15c; 4-inch, 17c. Riveted pe (per foot), 4-inch, 12c; 10-inch, c—also surface irrigation pipe. any other sizes to select from. rompt shipment. Write, wire or one. Adams Pipe Works, 2030 Bay t., Los Angeles, Cal. Phones: roadway 1264—F1917. (Under en- rely new management.)

All this needs to be kept in mind. The savage can have his own way until somebody kills him or robs him, but civilized man, for the sake of safety, surrenders certain privileges to sheriffs, judges and governors, and enlightened man, for the sake of progress, surrenders other privileges to health and school officers and so on.

If you are going to make cooperation a success you will have to drop that mean feeling against your neighbor. You must allow that the majority can decide things as well as you can, and you will have to ask yourself, "Why cannot I agree with my neighbor, instead of always trying to fight him?"

The best cooperation is a friendly spirit and a willingness to help each other. Talk to your neighbors who do not belong to our organization; tell them the good we are doing and hope to do; tell them the plain truth and get them to become one with us.—California Cured Fruit Exchange.

PLANTING NOTES

(Continued from Page 344)

vive the dry hot summers, it becomes a mere incidental, and cannot be urged as a reason for not using the pepper tree on streets and highways.

Plant Windbreaks

In scores of trips from Los Angeles to Riverside over the Salt Lake route I have for years watched the development of the district of which Wineville is the center. A few years ago it was one vast stretch of shifting sand dunes. Today it is an equally great stretch of profitable vineyards. Windbreaks and vines have broken up the "ground currents" so that vines and other plants are no longer buried by sandstorms.

Years ago the Hollywood district was known as the "Windy Cahuenga," now it is a quiet vale of beautiful homes. The transformation came through extensive planting of trees. A score of years ago Garvanza, in the northern end of Los Angeles, contained sand and gravel dunes swept by coastal winds, for though 25 miles inland it lies higher than intervening territory and the winds struck the surface with heavy force. Now, by reason of planting in Highland Park and of every street in the district proper, Garvanza is positively the least windy portion of Los Angeles.

The lesson to be learned is to plant trees everywhere, especially along our highways. Years ago, Golden Gate Park in San Francisco was such an active stretch of sand dunes that no tree could be grown. Grasses were planted or sown while the sand was wet. Then trees were planted inside rings made of brush and weeds, until finally the sand was stayed and permanent trees of a better class planted. With such examples before you do not hesitate to plant trees.

Rural Station Grounds

It may be that embellishment of the grounds about your home station may be the best, or indeed the only means of calling attention of the travelers to your community. No matter if it be on trolley or steam road the beauty will be equally appreciated. Cannot you take the matter up with the local agent with a view to improvement? Either he or higher officials will listen, for such ornamentation is a goodly asset and attraction for the railroads, enhancing the beauty and value of all points, whether otherwise interesting or not. Traveling becomes very, very monotonous to the cross-country tourist, and every little bit of brightness or beauty is appreciated. The tree lovers in recent convention at Riverside urged all chambers of commerce to take up this question with the railroads.

Schoolhouse Sites

Some time ago I visited a school yard of large size but where the building was placed only 30 feet from the front sidewalk. This allows no scope for variety of treatment; in fact no chance for any fine embellishment on the front. In grounds 300 to 400 feet deep the building should be placed 100 feet back. There then remains plenty of rear space for a baseball field. If there is a chance of broken windows a screen of strong wire should be placed over the windows in danger. Another school visited had the building but 60 feet from front on a 350 feet range, and but one entrance in front. Proper entrances should be made on all sides.

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See Yuba Tractor Advertisement on Back Page of Cover.

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of California Cultivator, published weekly at Los Angeles, Cal., for October, 1914.

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E. D. Thomas, Los Angeles, Cal.
R. M. Teague, San Dimas, Cal.
M. E. Teague, San Dimas, Cal.
Known bondholders, mortgagees and other security holders, holding 1 per cent or more of total amount of bonds, mortgages or other securities:
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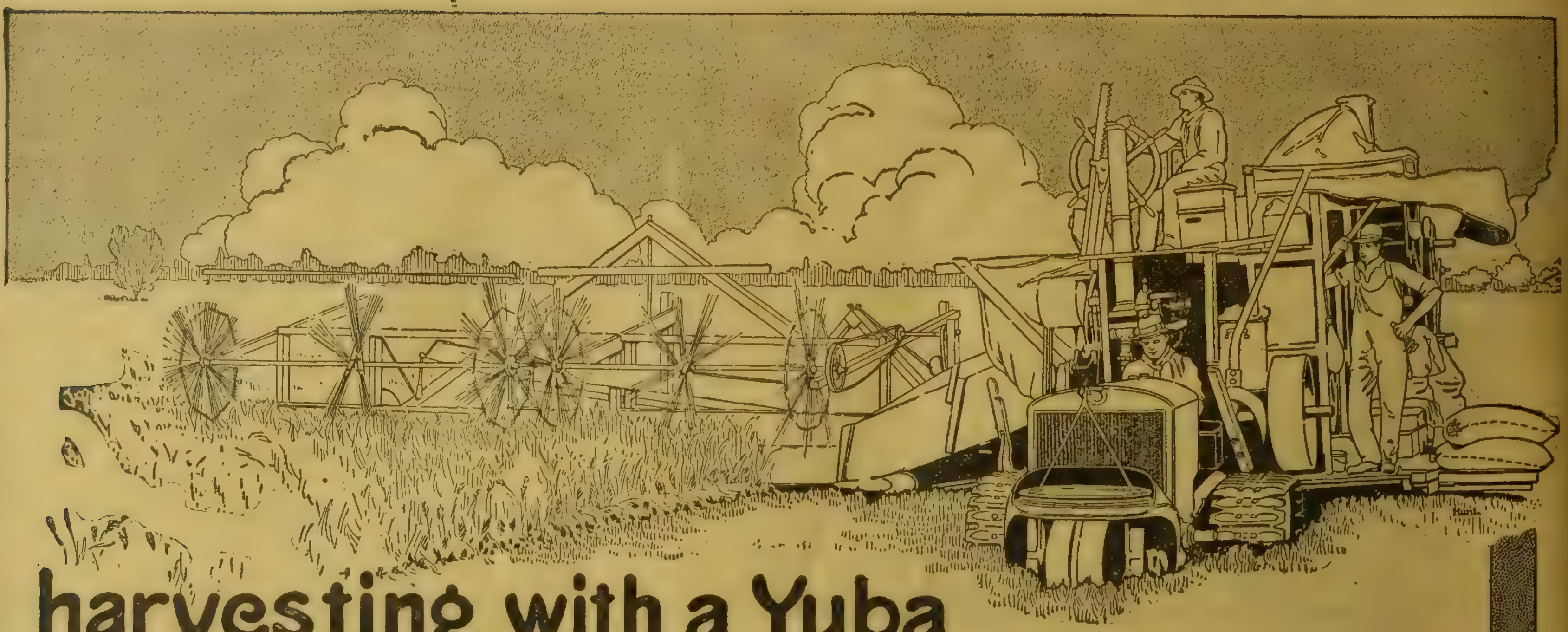
(If additional space is needed, a sheet of paper may be attached to this form.)

Average number of copies of each issue of this publication sold or distributed, through the mails or otherwise, to paid subscribers during the six months preceding the date shown above. (This information is required from daily newspapers only.)

FRANK H. THOMAS, Manager.

Sworn to and subscribed before me this 22nd day of September, 1914.
(SEAL) H. E. STORRS, Notary.
(My commission expires March 19, 1917.)



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CALIFORNIA CULTIVATOR

Rural Californian combined with California Cultivator

An Illustrated Weekly Magazine, Devoted to the Rural Home and Ranch

LOS ANGELES October 15, 1914 SAN FRANCISCO

Many Pecans Planted in California

The smaller tree at the reader's left is a Success pecan three years old, growing at Elk Grove. Mr. Claud Tribble is standing by the tree. This tree had but limited care, but was near head ditch and at three years bore several nuts. Tree at right is an older one, but the top which was grafted in is also three years old and bore several nuts the second year.

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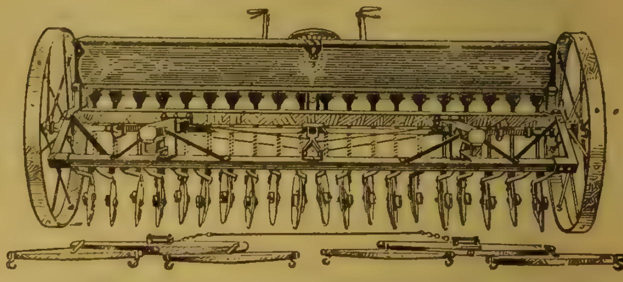

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California Cultivator
Rural Californian combined with California Cultivator
Vol. XLIII No. 16 LOS ANGELES: THURSDAY, OCTOBER 15, 1914 One Dollar Yearly

The Pecan Beautiful and Profitable

If Right Varieties are Selected the Pecan Proves a Good Bearer in California. Has Succeeded for Years in many Southern Sections. Mr. Claud D. Tribble Writes for Cultivator Readers of Some Particular Varieties Which Have Done Well in This State

The great success in pecan growing in the southern states has awakened much interest among California horticulturists and many plantings have been and are being made throughout the state. The great production of individual pecan seedling trees in many parts of the state has been the incentive for planting the very best varieties.

Taken from all points of excellence the pecan is superior to all other native nuts and certainly it is surpassed by no foreign species. Horticulturists realizing this, the pecan is being planted very extensively. Its importance as a source of horticultural wealth is being realized.

As a shade and ornamental tree we are much impressed with the upright, symmetrical growth, its immense size and age in its native forests and also the great size of many California specimens. If planted in orchard form the land may be interplanted with other crops or fruits for several years, thereby reducing the cost of maintaining the orchard and adding a source of profit as well.

While the pecan is of the same family as the walnut, so far all experiments in grafting, budding or hybridizing have failed. It is very difficult of propagation by budding or grafting. The most skilful propagators are content with 75 per cent of buds and grafts, and this is seldom realized. In the Southern states propagation is easier by budding, while in California grafting gives better results. Seedlings never bear till 12 years and many not till 18 years. Nursery grafted trees usually bear from 3 to 6 years from planting. Seedlings seldom if ever come true to seed. Scientific propagators all agree that they never come true. Like the walnut, they bear the stamens and pistils in separate flowers. The pistillate flowers, being receptive, may be pollinated with staminate flowers from a distance. Thus the seed could not come true; the pollen may be carried over a mile. In view of this fact the only way to secure good varieties and production is to plant grafted trees of the finest varieties. The large pecans called paper shell are worked upon the seedling pecan stocks, and in California a few nurseries are working them on seedlings of vigorous, heavy bearing trees grown here. The success of the orchard depends greatly on the vigorous stocks.

The pecan will succeed on a wide range of soils but does not seem to mature in our coast climate. The warm climate of the Sacramento, San Joaquin and lesser interior valleys produce it to perfection. It is at home on the rich alluvial soils of the river bottoms. We also find the seedling trees on heavy adobe soil, and while they do not attain the size they would on the richer soils, they are thrifty, and individual specimens bear heavily. The pecan must have plenty of water during its growing season and does well in land that would be too wet for walnuts. Cultivation and fertilization must be thorough if success is to be had.

Mr. H. E. Van Deman, the largest grower of pecans in the world, and said to be the best expert on this nut, while attending the California Fruit Grower's Convention at Stockton in December, 1910, was asked if the pecan would succeed in California. He replied: "As to the pecan in California, I fully believe it can be grown on your rich soils. Samples shown me gathered from trees in your city this morning, prove positively that they will grow and mature in your state, which is one of the very essential points. Large nuts with plump meats which part freely from the shell are the only kinds that should be grown. The only way to go about this intelligently and successfully is to get grafted trees of the well known choice varieties."

He was asked, "Then your advice is to try the pecan?" He replied, "Yes:" Mr. F. B. McKevitt, manager of the California Fruit Distributors, then stated: "I want to say that the pecan is now growing in this state in many localities. I have seen as fine trees growing at Chico, Vacaville and Visalia as any one could wish to see. Trees have been grafted of late years, and we are going to produce just as good pecans in this state as elsewhere. I believe California is better adapted to the growth of the pecan than any other part of the United States. I am informed that the trees at Chico, which are perhaps as old as any others in the state, never miss a crop, while in the southern states they have their off years and frequently miss a crop." Mr. McKevitt has since proved his faith in the pecan by planting it quite extensively on his place near Vacaville.

Mr. Rixford of the department of agriculture informs us that there are 14 acres of seedling pecans planted near Stockdale, Kern County, which never fail to produce abundant crops. Individual trees at Stockton and Farmington produce regularly from 250 to 300 pounds of nuts per tree. They are seedlings and the nuts are small. The local demand can not be supplied from these trees. Our attention has been called to many other heavy bearing trees. Of the California seedlings that have particular merit as to quality of nut, one is located on the Bidwell place at Chico, and compares most favorably with the best varieties of the southern states, and its propagation is being taken up by the United States department of agriculture. Near Winters, on the old Wolfskill homestead, are two trees of great bearing qualities. Mr. Lawrence H. Wilson sent up samples of these pecans and wrote: "These two trees produced over 800 pounds of nuts like the samples, and the wind had blown off many before they were mature." The nuts from these trees, while small, were of fine cracking quality, the meat separating freely from the shell and of the very best eating quality. We called the attention of Mr. C. A. Reed, pecan expert of the department of agriculture, to these pecans and he wrote; "While the nuts are not large they have good cracking qualities and excellent flavor. The great production of these trees, together with the quality of nuts, makes them of interest to us, and we are glad to have our attention called to them."

Grafted trees and top grafted trees are bearing in many parts of the state. Mr. Roeding of Fresno writes; "My grafted pecan trees are bearing well, especially taking into consideration that they are cut very heavily for scions." Mr. C. B. Cunningham of Mills has planted some nursery grafted trees of the Stuart variety and these are bearing very young. At three years old they produced several fine clusters and the trees are growing very rapidly. Trees top worked to the Stuart variety on Mr. Foulk's place near Elk Grove bore the second year and the third season produced a number of clusters of five nuts each. Mr C. A. Reed visited these trees last season and was much impressed by their production. In our own experiments we have tried all the leading varieties, and from such observations as we have made believe the Success, Stuart and Delmas to be as well adapted to our conditions as any varieties to be had. The Success has borne clusters of eight nuts, all filled, the Stuart clusters of five, and the Delmas from five to seven in clusters. All bear well for age of orchard trees and top grafts.

Late plantings of trees are being made in nearly all sections of these valleys, and it is only a matter of time till California will not only supply our own markets, but compete with the southern states for the world's trade in the finest pecans that can be grown and teach the discriminating public the difference between the large fine paper shell pecans and the uneatable, corky, polished specimens now to be found in the stores. When this is done there will be no market for the latter.

Alfalfa in the Orchard

Wm. M. Bristol Takes Up Discussion Suggested by Mr. Mills: "Does the Growing of Alfalfa in the Orchard Offer a Solution of the Soil Problem?"

In a recent issue of the Cultivator Mr. J. W. Mills mentions the fact that some years ago I sowed alfalfa in my navel orange grove, and adds that as he never heard the sequel he presumes the results were not satisfactory. This allusion at the close of Mr. Mills' very interesting article on the humus problem implies that it is my duty to tell what I know on this important subject. I hasten to say, however, that if I confine myself to what I know I shall finish in a dozen lines. Hence I shall digress into what I believe.

I believe that in the growth of various cover crops in the fruit orchard lies the solution of several of the difficulties with which the fruit grower in warm climates has to contend. It may be said that nature has two methods of loosening and leavening the soil. In northern climes the old nurse of earth does it by freezing and thawing. In the south she accomplishes it by a winter growth of vegetation. In January of last year the orange growers of California came nearer a test of the former's method than they cared.

It is true that I tried alfalfa in a part of my orchard—about eight acres—where the soil is red and underlaid, in places, by natural hardpan. This area had been fenced for poultry, and a large flock of chickens and turkeys had ranged over it for a couple of years. There is a popular notion that the combination of fruit growing and poultry raising on the same piece of ground must surely be a good thing; but, like many another day dream, there are weak links in it, for the poultry prevent the growth of cover crops and thus, in turn, prevent the leavening of the soil by the only natural process given to this region.

But stay; I have forgotten another—the earth worm. Here again, however, the poultry interfere with nature's provisions, for they diligently follow the implements of cultivation and devour the husbandman's best friends as fast as the plow turns them up.

After two years of the poultry regime my red soil was like unto an eight-acre sunbaked brick, and I saw that a radical change must be made. I sowed alfalfa broadcast, furrowing out immediately after the seed had been lightly harrowed in. A year later the alfalfa was plowed under, having been mowed only once. The land is on a rather steep slope and therefore necessitated the use of a scythe in cutting—and it is an enthusiast who can swing Father Time's scepter over an eight-acre hillside as often as alfalfa demands.

As to the effect of the alfalfa on the soil I can say that it was very plain, the ground afterward taking water more readily and the trees showing a new interest in life. I intended to repeat the venture in a different way, sowing alternate lands only in the orchard and letting the alfalfa grow two years in order that the roots might make larger and deeper holes in the hard soil. I have delayed this, however, because I have been engaged in another experiment on the land in question—a venture whose cost runs into hundreds of dollars per acre, but which, so far as carried out, has effected a transformation, the story of which is comparable to an Oriental tale.

This venture is nothing less than covering the red soil with a six-inch layer of loose soil hauled into the orchard by wagons. Changing the face of nature? Yes; and to those who have seen the trebled number of oranges on the trees, and their doubled size, it is plain that we have made the old nurse smile. But I am not sticking to my text.

The effect of the alfalfa while it was yet growing in the orchard seemed to indicate that it drew largely on the

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nitrogen in the soil, for the trees took on a lighter green in the fall, and the oranges when weighed at the packing house averaged 10 per cent heavier than those from adjacent groves. I have no reason to doubt the statement of our agricultural scientists that leguminous plants take nitrogen from the air, but it is plainly apparent that they are better pleased to find it in the soil. I applied no fertilizer while the alfalfa was growing; perhaps if I had used some nitrate the effect of the alfalfa on the trees would not have been so marked. Whatever pale green means aboard ship or on the rail, in the orchard it is the signal of distress. It was to overcome this condition that I decided to have alfalfa growing only in alternate lands, plowing under every two years and sowing the lands which, in the meantime, have been under cultivation.

All of this logic and planning, however was tentative, and now that I am ready for an intensive cover crop campaign, two new candidates for the office of soil leavener have entered the lists. I refer to Melilotus indica, the annual sweet clover bearing yellow blossoms and which grows in the winter season, and Melilotus alba, the biennial variety which bears a white flower and makes its principal growth in the summer. I have had no personal experience with either of them, but two Highland neighbors, R. S. Thompson and C. L. Frazer, have plots of the alba which were sowed late last spring and which are now covered with dense masses of verdure which will shortly be plowed under.

In response to my question, "Why don't you let it grow two years, cutting it and plowing under the hay in alternate lands?" Mr. Thompson referred to the new declaration of the soil scientists that dry vegetable matter upsets in some way the favorable nitrogenous conditions in the soil. I confessed that I had not heard of this newest promulgation of our soil experts and admitted that I was born in a state which borders on Missouri. There are people in this region who are buying straw and cheap hay to spread in their orchads in lieu of stable manure. If there is any well-founded objection to the practice I think it the duty of some one to warn them.

As I write I have before me the circular of an Iowa seedsman, headed "Truth About Sweet Clover," which reads, in part as follows:

"Sweet clover is used as either a feed crop or as a fertilizer to plow under to improve the soil. It is equal to red clover or alfalfa to plow under, makes a larger growth than either, grows faster and is easier to start.

"It will thrive on almost any kind of soil. It will grow on any soil that will grow clover or alfalfa and on many soils that will not grow either. It will grow and thrive on thin, sandy soil, hardpan, gumbo, rocky upland, clay and alkali land.

"Sweet clover lives two years. It makes large, rapid growth the first season and can be cut for hay or pastured the last half of the summer, but does not bloom or bear seed. The second year it blooms, bears seed and dies. Can be plowed under either the first year or the second year. It makes a heavy yield of seed which can be either threshed or hulled.

"It seems to do best sown very early in the spring, either alone or with a nurse crop of small grain. Use 10 to 15 pounds of seed per acre. Cover very shallow. It can also be sown on pasture or rough land, right on top of the ground without breaking up, and is often sown on such land in the winter, especially the unhulled seed. The freezing and thawing seem to make it grow better.

"We have never found it necessary to inoculate to get a start of sweet clover. On the other hand, it starts very easily, soon shows a good supply of the helpful bacteria nodules, and as they are the same breed as those on alfalfa, it inoculates the ground ready for alfalfa.

"There is no danger of its becoming a pest. Our seed is northern grown. Southern seed is less hardy and more likely to contain dangerous weeds, especially Johnson grass.

"The only variety recommended is the big white, Melilotus alba. We do not grow or advise the yellow."

So much for a northern man's estimate of Melilotus alba. It has been suggested that the two varieties used in summer and winter, respectively, may make a strong team for the California orchardist. For those who doubt the summer and winter growing characteristics of plants so nearly related it is only necessary to allude to the beans and the peas, which are closely related and yet flourish in summer and winter, respectively.

Present-day tillers of the soil discourse knowingly of things they know only by hearsay. We talk of soil conditions, but, even with the aid of the soil chemists, are not positive concerning their causes or their cures. But nearly every owner of an orange orchard twenty years old knows that something must needs be done to rejuvenate his trees. Rotation of crops is counted not only good practice, but absolutely necessary in ordinary farming. If it be true that any certain plant poisons the ground for itself if grown for years on the same land, it follows of necessity that the orange tree must do the same. In other words the decadent condition of our trees may not be due alone to the compacted state of the soil following years of irrigation and tramping. If this is true the growth of cover crops is, to all intents and purposes, crop rotation.

A few years ago the six-horse subsoil plow was much in demand. My limited experience with alfalfa leads me to believe that it, or some other deep-rooting legume, will loosen the soil more deeply, more systematically and more cheaply than any mechanical implement, at the same time improving both its physical and its chemical condition. The growing of a summer cover crop will require a greater outlay for water, but if the water is available its price may well be drawn from the fertilizer fund and without fear of regret for the transfer.

CYANIDE INJURY AND BORDEAUX PASTE

Written for California Cultivator by H. J. Quayle

The attention of citrus growers and fumigators is called at this time to possible cyanide injury where fumigation follows the treatment of trees with Bordeaux paste for gummosis and scaly bark. It has been known for a number of years that serious injury is likely to result from fumigation following Bordeaux spraying. The injurious action in such cases is easily explained and accounted for, but it was not sus-

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pected that injury would result where Bordeaux paste was applied simply to the trunk and larger branches. Many cases have been observed during the present season, however, where fumigation injury has been intensified on trees that had the Bordeaux paste on the larger branches. Where the paste is limited strictly to the trunk no increased injury occurs so far as observed, but since injury has been noted where the paste occurs but a very short distance on the branches, it is suspected that even where the paste is limited to the trunk, the tree may also be rendered slightly more susceptible to injury.

It is not the purport of this statement to advise against fumigation because trees have been treated with Bordeaux paste, but simply to call attention to the fact that trees so treated seem to be more susceptible to fumigation injury. In most of the cases noted the Bordeaux paste was not the only factor in the injury. Bordeaux paste on the branches and high humidity has been the most usual combination where injury has resulted and in the case of unhealthy trees. Whether the moisture acts directly upon the paste is not known. It is more probable that since moisture under normal conditions increases danger of cyanide injury, the limit of safety is more quickly reached with Bordeaux treated trees. Where trees are to be treated with Bordeaux paste during the present season it would be best to delay this treatment until after the trees have been fumigated.

Spraying trees with Bordeaux where fumigation is to follow the same year should be absolutely avoided. Where the trees are sprayed for a foot or two up from the ground for brown rot and where fumigation follows, there will also result very serious injury to the entire tree. Where Bordeaux paste is limited to the tree trunk there has been no increased injury so far as observed. Where the Bordeaux paste occurs on the trunk and up into the larger branches the tree is more susceptible to injury, and fumigation should be carried on carefully when weather conditions are such as to make cyanide injury more likely under ordinary conditions.

A WORD ABOUT POTASH

A believer in the application of nitrate supplies the following as a possible temporary solution of potash shortage:

The European war having put a stop to shipments of potash salts from Germany to this country, we find some of our friends disturbed over the likelihood of not being able to get potash with which to plant their spring crops.

Potash is one of the three elements most essential to plant growth. Practically all soils suitable for farming contain potash in available and unavailable form. As plant life takes potash only to the extent of its needs, if there is any excess in the soil it will remain until used, as potash does not leach out of the ground. Fortunately many farmers have been using potash in increased amounts each year, so that the soil is better supplied with available potash than was the case a few years ago, and there probably remains in the soil a supply which has not been assimilated by the crops.

The problem of the individual farmer is to conserve his potash, which can be done in the following way: Green manuring or turning under a cover crop, dressing heavily with barnyard manure, balancing chicken manure with nitrate of soda and acid phosphate, saving wood ashes to mix with nitrate of soda and acid phosphate, rendering inert soil potash available.

Nitrate of soda will do more than any other agent to render soil potash available. The potash that can be made available in the soil is usually in the form of hydrated silicate of potash and alumina. The nitrogen in nitrate of soda, having been assimilated by the plants, leaves a residue of soda which acts on the hydrated silicate of potash and alumina and renders the potash available. As the amount of potash which can be made available in any soil is quite limited, the process of freeing it is only a temporary measure to meet an emergency and it must eventually be replaced. Every 100 pounds of nitrate of soda will split off 50 to 55 pounds of actual potash and assure successful crops for a time where no additional potash is used.

Organic ammoniates such as blood, cottonseed meal, etc., will not render soil potash available, and in the absence of potash nitrate of soda should be used as the sole source of nitrogen or ammonia in all formulas up to and including three per cent.

THE CAROB

"The popular name for this tree in Palestine is the 'locust,' and the fruit is known everywhere as the 'bread of St. John,'" writes Dr. De Hass in the Journal of Agriculture. "In Arabia it is called carob, from the horn-like shape of its pods or fruit. These pods are sometimes called 'husks,' and without doubt are the 'husks' the prodigal in his distress would fain have eaten. This tree is found all over Palestine. It is a dark evergreen with heavy foliage, affording a delightful shade, and bears a crescent-shaped bean about six inches long and one inch wide. The fruit is fed to horses, cattle and swine. The trees are generally registered; property in them is capital, and marriage portions are frequently given in locusts, or the fruit of the carob. The fruit, when ripe, contains a sweet pulp, which is compressed and made into honey, called 'dibs,' which is the honey in general use among the peasantry of Palestine."

UNITED STATES OF EUROPE

A day will come when the only battle field will be the market open to commerce and the mind opening to new ideas. A day will come when bullets and bombshells will be replaced by votes, by the universal suffrage of nations, by the venerable arbitration of a great sovereign senate, which will be to Europe what the parliament is to England, what the diet is to Germany, what the legislative assembly is to France. A day will come when a cannon will be exhibited in public museums, just as an instrument of torture is now, and people will be astonished how such a thing could have been. A day will come when these two immense groups, the United States of America and the united states of Europe, shall be seen placed in presence of each other, extending the hand of fellowship across the ocean.—Victor Hugo.

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Deciduous Fruits

DORMANT AND NON-DORMANT FREIGHT RATES

Written for California Cultivator
By Chas. A. Chambers

As secretary and manager of the Fresno Nursery Company, I was constantly annoyed during the past nursery shipping season by the variation of freight rates when receiving and making shipments of nursery stock. It seems the railroad companies have made classes of dormant and non-dormant nursery stock, which has caused the confusion and annoyance. On some shipments we were charged first class rates, on others double first class rates, and when the railroad companies were asked for an explanation they claimed that dormant and non-dormant conditions covering shipments in question were the cause of this variance. You can imagine how watchful one has to be to keep track of all shipments when paying freight bills to prevent being overcharged. The railroad companies have been claiming that an evergreen tree, plant or shrub, inasmuch as this class of stock retains its leaves, should be classified as non-dormant, while trees, plants or shrubs of a deciduous nature or those that drop their leaves are dormant. This ruling is rather hard on the nurseryman and planter and, I contend, an imposition.

An evergreen tree, particularly a citrus tree, is invariably balled. In the case of an orange tree, the roots are covered with a ball of earth, wrapped in a burlap covering. This ball usually averages at least 25 pounds. It seems to me where we are paying freight on a lot of mud, presuming that an evergreen tree is non-dormant, that we are paying enough freight at the regular nursery stock rate, without having an additional amount to pay simply because a tree happens to possess leaves.

Dormancy does not mean on the verge of death. A deciduous tree, while it does not show any leaf growth when removed from the nursery, is not different from the evergreen tree because the latter retains its leaves. The sap in a deciduous tree is just as much alive as the sap in an evergreen. An evergreen tree is rendered just as dormant as a deciduous tree when the roots are cut to enable it to be balled and taken up for shipment. If grown in a pot for commercial purposes the tree or plant so grown, inasmuch as the roots are hampered and cramped in a small container, is more or less dormant until actually given its freedom by being removed from the pot and planted in the open. I think that every nurseryman will bear me out on these points. All nursery stock, whether evergreen or deciduous, where the roots are cut for the purpose of taking them up and preparing them for shipment, and where they could not possibly live unless replanted in the open ground, should be classified as strictly dormant stock and entitled to the lowest freight rate quoted on shipments of nursery stock. Tender potted plants that continue to grow and thrive in the container, and those that are not removed from the vessel, pot, can or box they are growing in when received, would be, strictly speaking, non-dormant nursery stock. Everything else in the tree and plant line as described above should be classified as dormant.

The freight rates at the present time are as much as the traffic will bear, and I see no reason to be so strict on classifying nursery stock into so many classes. It is very confusing as well. Very often these so-called non-dormant and dormant trees are packed together—a shipment may contain all dormant trees except one little, measly geranium or two in a pot—and if the geranium happens to stick its head out of the covering the railway company's receiving clerk may chalk up the whole shipment with a double first class rate, claiming that the entire shipment is non-dormant. This is a hard matter to regulate when filling orders for assorted stock. The method of packing should regulate freight rates, as formerly.

This dormancy and non-dormancy of nursery stock reminds me of a happening which came under my notice several years ago. A party in Florida made a shipment of a large box of alligator eggs, packed in coarse sand, to a man in Fresno. The shipment, when leaving Florida, was freight-billed as eggs, taking a certain rate of freight. When it arrived in Fresno a greater part of the eggs had hatched, and instead of a box of alligator eggs, the box contained live alligators, and the rate was changed at destination from the egg rate to the rate charged when shipping wild horses. Perhaps these rate fixers who classify dormant and non-dormant nursery stock got their inspiration from this incident.

Take, for instance, our friend George C. Roeding's blastophagated figs. If billed out as figs they would take the fig rate; if billed as Capri figs with fig wasps, they would probably take the livestock rate, and with each shipment it would be necessary to have a human being accompany the shipment with a first-class ticket, to water and feed the blastophaga in transit. It seems to me that the railway companies should pay more attention to poundage and tonnage rather than the commodity itself.

DYNAMITE FOR TREE PLANTING

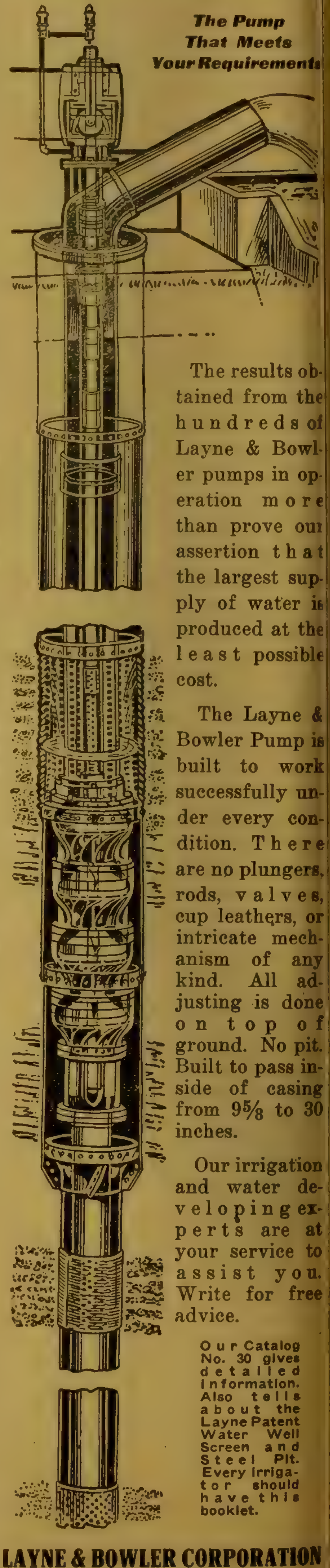
The New Mexico experiment station has issued a bulletin on the use of dynamite on the farm, written by Roland Harwell, assistant in agronomy.

From it we quote a few paragraphs on tree planting:

In heavy adobe soils, such as require quite an excavation in order to secure proper development of the young root system, it has been found advantageous to explode small charges of a low grade slow acting dynamite (20 per cent ammonia), at a distance of from 18 inches to 36 inches from the surface, thus forming a hole for the tree and at the same time loosening the soil to a greater extent, both in surface area and depth, than is possible when holes are spaded.

The charges must of necessity vary with the condition of the soil. There is no "rule of thumb" to be applied in this case. The resistance offered by the soil measures the quantity of dynamite necessary; as does the depth at which it is placed. In general, for the above mentioned depths, the charges vary from ¼-pound to 1½-pound. A little experience and understanding of what constitutes a dynamited tree hole will solve the problem. A few simple experiments always repay the slight additional cost.

An ideal tree hole, strange to say, isn't a hole, after all. Should the operator use a charge sufficiently strong to blow the earth entirely out from about the dynamite, he might be embarrassed by the fact that there would be little dirt left at a convenient distance to replace about the tree. Further, there would be a decided waste of energy in raising the earth to a scattering distance. Once the surface gives way, the expanding gases slip from beneath the soil particles and join the atmosphere, where space is less contested. The ideal hole is produced by charging in such a manner as to raise the surface soil to a height of four feet or such a matter, and then let it fall back in place. This soil, when falling back, will become caught at the surface of the hole, and by giving it a few downward pushes with a spade a hole large enough for the tree will result and plenty of loose earth for packing about the roots will be at hand. In this manner a large radius of dis-



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turbed or subsoiled earth will be produced.

The method in some instances can compete in cost with spade holes, with the advantage of much more soil being loosened. As far as known, no harm results from the fumes remaining in the soil for several hours after the hole is made and the tree is planted.

In general, the cost will range from six cents to 27 cents per tree hole, for dynamite, fuse and caps. The labor cost also varies with the soils from one cent per hole to five cents.

The holes for the charge are put straight down, and are one and one-half to two inches in diameter. A bar may be driven down and pulled. A pipe can be driven, its core of earth being removed several times before the desired depth is reached; or an earth auger can be used for this purpose. Generally, the latter method is the best.

In subsoiling for other purposes the method is identical, except that the earth is not lifted so high in the air, and the holes are so spaced that all the soil of a given area is loosened. This spacing varies from four feet, zigzag to ten feet. The condition of the soil determines this, the heavier clay soils requiring the closer spacing. The method is expensive, and only to be used where cheaper methods fail.

FRUIT CROP OF WASHINGTON

The Washington state department of agriculture has issued a report estimating fruit shipments from all of the leading commercial fruit districts of the state for the present year at 17,000 cars, as compared to 11,895 cars for last year.

The report says that in spite of the ravages of fire blight and other pests, a "good average crop" may be predicted. Estimates of the production of the various districts are as follows:

Wenatchee Valley, Okanogan, Lake Chelan, 6,800 cars.

Yakima Valley, Kittitas and Benton counties, 7,000 cars.

Spokane district, 700 cars.

Walla Walla, Touchet Valley, 900 cars.

Clarkston and Palouse districts, 650 cars.

Klickitat and Skamania Counties, 100 cars.

Stevens and Ferry Counties, 250 cars.

Puyallup Valley, 650 cars.

In addition, the Puyallup valley will ship 470 cars of canned fruit and the islands and lower Puget Sound district 240 cars of berries. The Clarke County dried prune crop shipment is estimated at 1,500,000 pounds.

THE WOOLLY APHID OF THE APPLE

The woolly aphid is one of the most insidious and dangerous of apple pests. It occurs on the roots and above ground, also on the branches. The branch form can be easily controlled by contact insecticides, but it is practically impossible to stamp out the aphids on the roots.

Winter weather of eastern Washington is usually severe enough to destroy what individuals are above ground, so that developing colonies in the spring come from wingless aphids of the roots or crown. These aphids are apt to locate on a bruise of the bark and soon become conspicuous because of a growth of "wool." Their feeding poisons the tree and results in a local swelling and ultimately in a weak tree with small-sized fruit. After a couple of generations some winged individuals appear which migrate to other apple trees, thus spreading the pest. The summer generations are less vigorous, and in early fall other winged migrating individuals are produced. These rarely seek apple trees, but are attracted to elms, if near by, and there give birth to wingless sexual aphids, the female of which produces a single egg, which is laid for the winter deep in a crack of the bark. The following spring the insect inhabits the leaves of the elm, forming rosettes of curled leaves. Its third generation is the winged spring migrant that returns to the apple tree.

The woolly aphid is prevalent on nursery stock, and thus gets access to a new region. Apple stock showing swellings or galls should not be planted, and elm stock should be carefully searched for black eggs. When the woolly aphid occurs above ground it can be destroyed by a light swabbing of alcohol, gasoline or kerosene, or if numerous by a spraying of tobacco-soap, such as is given for green aphis. The underground form can not be effectively reached and is consequently most dangerous. Kerosene emulsion, Sulphur-lime or an abundance of tobacco dust applied to the roots have been recommended, but give only partial benefit. Plowing and cultivation to force the roots down are thought to be helpful since the aphids do not thrive much below a foot. Northern Spy trees are remarkably free from attack, and such stock would prove valuable in a badly infested district. The woolly aphid is too delicate and weak to force its way through the soil, but it will work along cracks and roots and thus spread through the orchard or nursery row. To prevent branch infection from below, the trunk may be banded with equal parts of rosin and castor oil melted together and applied on burlap or cotton strips, or if in a dusty district where this method would be inapplicable, it has been suggested to pack around the trunk of the tree a good layer of sand through which the aphids cannot crawl.—A. L. Melander, Entomologist, Washington State Experiment Station.

There are two kinds of cranks: one is impractical, the other is an expert who pays little attention to the rules others have laid down.

HOTHOUSE GRAPE CULTURE IN BELGIUM

According to a consular report, more than 15,000 hothouses in Belgium are devoted to growing grapes and the annual production is from ten to eleven million pounds. It is said that new hothouses are being constructed each year and that the industry is becoming more and more important. Belgian growers of hothouse grapes who have visited hothouses in the United States consider the methods used in Belgium for growing these grapes, and especially the construction of the buildings and the system of heating, far superior to the American way. It is said that some of these growers are thinking seriously of establishing hothouses for grape culture in the United States, as they consider the opportunity good.

The usual type of hothouse used for growing grapes is 65 feet long, 26 feet wide and seven to nine feet high. They are heated by means of large tile pipes from hot air furnaces built underneath at each end. It is said to cost about $20.00 a month to heat one of these houses during the forcing season, anthracite coal being used as a fuel. The average cost of building a hothouse of this size is $290.00. Wages paid workman average about 67½ cents a day. One hothouse of the size described will contain 60 grape vines and the average production is 775 to 1000 pounds. Peaches, pears, and tomatoes are also grown in large quantities in the same hothouses. One house will accommodate 800 pots of tomatoes. From September to April salad plants are sometimes grown with the grapes in the hothouses, lettuce, spinach and radishes being the most important crops thus grown.—Market Growers' Journal.

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Commissioner for Hetch Hetchy legislation before Congress to secure a mountain water supply for the cities around San Francisco Bay.

Commissioner to Europe by appointment of President Wilson to support the United States Government's invitation to foreign countries to participate in the Panama-Pacific Exposition.

Secured appropriation of $500,000 for United States building at the Panama-Pacific Exposition.

Declined ambassadorship to one of the great European nations, preferring service at home.

Led in the fight for a new charter for San Francisco, which insured home rule, civil service reform, responsible government and municipal railroads.

Raised standard of pay for laborers in the city employ.

Head of the San Francisco Relief Committee in the disaster of 1906. Appointed by the President custodian of the relief fund aggregating $10,000,000.

Worked and spoke before the Legislature for the enactment of an anti-alien land ownership law.

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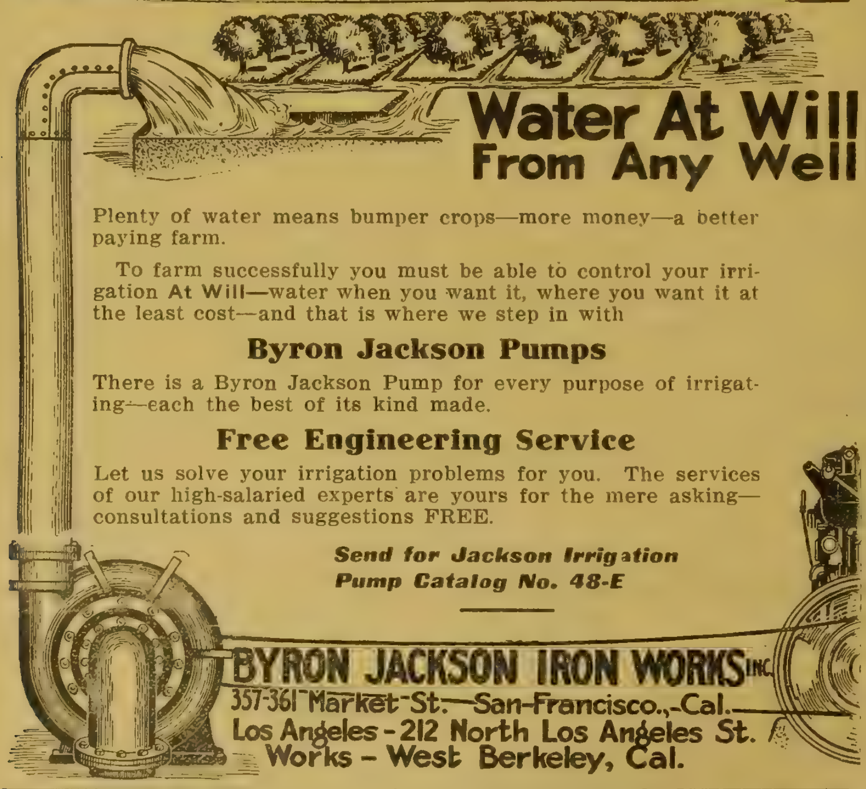

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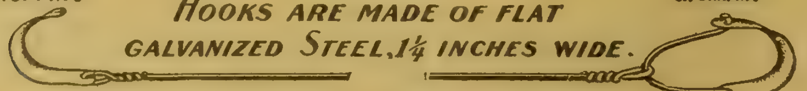

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Questions and Answers

THE EDITOR AND STAFF

Questions to be answered in this department should be received at this office one week before reply is expected. Write plainly on one side of the paper and sign full name and address. Unsigned communications receive no attention.

Delayed

We ask the pardon of many who have sent queries to the Cultivator recently because of the delay in answering them. Our columns have been so full that the department has been of necessity greatly reduced. It will not be long now, however, until all will be answered.

Dry Mash

I would like a formula for a dry mash for laying hens. Should the same amount of fish meal be used as of beefscrap?—Subscriber, Beaumont.

Fish meal does not quite take the place of beefscrap, so it is customary instead of substituting fish scrap altogether for beef scrap to use half and half.

The "association mash," which is used quite generally in Southern California, consists of (to a ton of mash): 600 lbs. of bran; 400 lbs. ground barley; 300 lbs. shorts; 100 lbs. feed meal; 200 lbs. Kafir meal; 150 lbs. beef scrap; 150 lbs. fish scrap; 70 lbs. fine ground bone; 100 lbs. alfalfa meal; 10 lbs. salt. If you wish to mix this in small quantities the proportions can be reduced to the following: Three parts bran, two parts ground barley, one part Kafir meal, one and one-half parts shorts, one-half part feed meal, one-half part alfalfa meal, three-fourths part beef scrap, three-fourths part fish scrap, one-third part ground bone. The salt is not important, and in mixing a small quantity of the mash I should not bother with it. I have found a mash of two parts bran, one part middlings, one part feed meal (coarse corn meal), one part alfalfa meal, one part ground oats, one part fine beef scrap (or beef scrap and fish scrap mixed) and one-half part ground bone very satisfactory, but it is a good plan, whatever you use, to change it occasionally. The fowls like a variety, and sometimes certain feeds can be bought more cheaply than others. At molting time I add about one-half part linseed meal to my mash formula. It helps the new feathers to grow and is good for occasional use during the laying season.—J. A. K.

A Mustard Problem

A subscriber in Santa Barbara county asks the reason for a short crop of mustard; whether it is the season or soil conditions, and what fertilizer should be used to replace fertility removed by the mustard crop.

In order to help in solving his problem we must have many more facts. If rainfall was so short as to cause failure of the crop on other land known to produce satisfactory yields, the season may be the cause. If rainfall was ample, it is possible that faulty culture methods, which did not conserve the moisture properly, are the reason for a shortage. If all other conditions except soil fertility were favorable, a soil analysis made and interpreted by a reliable soil expert will show the essential elements lacking, and the expert will be able to suggest the best fertilizer and the proper amount to use. He will also be able to analyze the plant and determine the amount of fertility a crop will remove annually. We are not able to find an analysis of mustard in any of the experiment station bulletins or other literature.

State Fair Secretary

A letter comes from Pomona with stamp for answer, requesting the name of the secretary of the state fair, but the inquirer failed to sign any name, so that we are unable to answer directly. However, the name of the secretary is C. W. Paine, and he may be addressed care State Board of Agriculture, Sacramento.

Slobbers

What is the matter with rabbits when they move their jaws up and down and slobber and smear themselves? They will not eat, and I find, upon examination, that the liver is streaked?—Subscriber, Anaheim.

They have that disease which is dreaded by all rabbit fanciers, and which is so prevalent among many rabbitries. To remove the cause keep them isolated from all healthy animals, as it is contagious. This disease is usually caused by those affected being kept in draughts or cold, damp and wet pens or hutches, also where the air is foul or contaminated.

Animals afflicted should be kept in a warm place on a nice bed of clean, dry straw. Unless they are valuable animals, would advise doing away with them, even if compelled to use the hatchet. Think it would be advisable to feed dry feed only for awhile, cutting out fresh, green grass, alfalfa and green vegetables.—R. V. M.

Aphis on Milo

What is affecting my milo maize and sorghum? I send leaf with sweetish substance on it, also many very small insects.—Subscriber, Antelope Valley.

This is an exceedingly bad case of aphis, and the sweetish substance accompanying it is probably caused by the aphis. Spraying with any of the contact insecticides, especially a weak tobacco solution, will reduce the pest, but presume that would hardly be practicable with such a crop as milo. The state insectary has at times distributed colonies of lady bugs, which have proved a valuable aid in controlling the pest.

Mililotus

Would like to know the name of the clover enclosed. It grows very tall and rank and horses seem to eat it, and I would like to know if it would be good forage for milch cows.—Subscriber, Selma.

This is a clover, Melilotus alba. When young and lush think it would be good for milch cows.

Book on Swine

What is the best book on swine husbandry, one which treats of breeding, feeding, handling and diseases?—Subscriber, Turlock.

Probably one of the best is "Swine in America," by Coburn, published by the Orange Judd Company. The Cultivator will be glad to secure the book for the inquirer at the publisher's price, which is $2.50 or, with the Cultivator one year, $3.25.

Grafting Over Peach Orchard

The question involved in the enclosed clipping [in which we spoke of difficulty in grafting over bearing peach trees] has appeared several times of late in your columns. I would like the privilege of correcting a mistaken impression.

I know from much experience that deciduous fruits can be budded over to advantage even when well grown trees. I have found it profitable and feasible in every respect. Ten year old trees are not too old. Usually the buds can be inserted in the heavy bark just as in the case of old orange trees. If this does not take well the second budding may be done in suckers, which will grow from the decapitated limbs in a few weeks. The first budding may be done as soon as the sap flows in the spring and after about three weeks the limbs may be removed. By June there will be good growth to bud into to replace all buds which have failed at the first budding. At the June budding practically everything should take. These may then be forced on so that by fall there will be a good top. Such

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trees will bear well the third summer. Having strong root action they will far outstrip any trees that might be planted to take their place. It may be urged that the peach tree is a short lived tree. But is this the case? I have peach trees that are 35 years old that are still bearing from one to two hundred pounds of peaches annually. It is a matter of care, not age. With trees of this age at least one year will be gained by budding them over. The expense will not be much more, either. —E. L. Koethen.

Whitewash.

Please give formula for a whitewash that is durable.—Subscriber, Encanto.

Formulas formerly given in the Cultivator are as follows:

1. Slake fresh quicklime in water and thin it to a paste or paint with skim milk. The addition of two or three handfuls of salt to a pail of the wash is beneficial.
2. Two quarts skim milk, eight ounces of fresh slaked lime, six ounces of boiled linseed oil and two ounces of white pitch dissolved in the oil by a gentle heat. The lime must be slaked in cold water and dried in the air until it falls into a fine powder; then mix with one-fourth part of the milk, adding the mixed oil and pitch by degrees; add the remainder of the milk. Lastly add three pounds of the best whiting and mix the whole thoroughly.
3. Slake one-half bushel of lime in boiling water, keeping it covered; strain and add brine made by dissolving one peck of salt in warm water, three pounds rice flour, then boil to a paste; add one-half pound whiting and one pound of glue dissolved in warm water. Mix and let stand for a few days before using.

Any of the above may be colored any desired tint by adding yellow ochre, lamp black; burnt umber or Indian red. For the formula used by the government on lighthouses and other buildings see Cultivator of August 21, 1913, page 173.

Leaf Spot.

Please tell me the name of the blight or insect working on the alfalfa twig which I send. The alfalfa is in its first season, has been well cared for and thoroughly watered. The lower leaves of the plant are first affected and the brown spots increase in number until the whole leaf is covered and falls off, leaving bare stalks.—Subscriber, Edenvale.

This is leaf spot, a fungous trouble of alfalfa, which has been prevalent this year. Some crops have been entirely destroyed. It is a trouble which will be corrected by warmer and dryer weather.

Bermuda in Alfalfa.

Please suggest best treatment of alfalfa run out by Bermuda grass. I will plow up (shallow) after next cutting. I understand that next year cultivated crops are in order, but this winter could not a heavy crop of hay be raised without the grass gaining much if any? As to detail of working, would you disk thoroughly after plowing or not? Cultivating or harrowing will drag up a lot of stuff that might otherwise rot. As I contemplate the necessity of plowing up the alfalfa probably every five years, wish to work out a good rotation. Land is rich sandy loam and have all the water I can use. Could part of the land be cleaned up by February (by frequent discing), so that there would not be too much trash for potatoes? Your advice would be much appreciated.—Subscriber.

In this matter of rotation we ask subscribers to give suggestions. As a rule sugar beets are perhaps one of the best crops to follow alfalfa, this in case the Bermuda is not too heavy. If Bermuda is very heavy I would fall plow, seed to barley, follow with beans or corn, then sugar beets, alfalfa and so forth. This is a long question and is well worth a conference meeting. Let us have it in the columns of the Cultivator.

Oregon Strawberry.

Will someone give information as to the new improved Oregon strawberry, especially on the point as to whether the flowers are perfect or it is necessary to interset with other varieties in order to pollenize.—Subscriber, Carmel.

We are not acquainted with this particular berry and will appreciate information from those who have grown it.

Advice on Soils.

If we could have a chemist in connection with the Cultivator to answer questions as to soils and fertilizers it would be very valuable.—Subscriber, Carmel.

The Cultivator has access to a number who are qualified to answer questions fully and has often answered queries as to fertilizers and soils. As to soils, there is so much diversity that an analysis is of value only to the owner of the particular piece of soil analyzed and would have no interest for other readers. Any question of a general nature we will be glad to look up for our readers. In the matter of determining soil conditions there are chemists and soil physicists advertising in our columns who will be able to answer personal questions.

Carnations from Cuttings

Please give information regarding growing carnations and roses from cuttings. What is the best month in which to start them? How are carnations pruned?—Subscriber, East Bakersfield.

Regarding reproducing carnations from cuttings, McLaren, in "Gardening in California," says: "In propagating by cuttings use only wood which is short-jointed and carries strong healthy leaves. Dibble them about one inch apart in boxes filled with sandy leafmold, and place them, in March, in cold frames or in a shaded, sheltered spot out of doors. They may also be put in, in a similar situation, in September with equally good results. As soon as they are rooted, transplant them three inches apart into boxes or into a sheltered border until ready for their permanent quarters.

"Where only a few growths of any desirable variety can be had propagation by layering is perhaps the surest of all methods. Layering is effected by simply bending one of the branches or shoots into the soil (after, with a sharp knife, having cut a slit into the shoot on the underside, about half

(Continued on Page 378)

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Pure clean seed is necessary to get good results. Adulterated seed will sow your fields with weeds and pests. Our seed is guaranteed to be grown, harvested, cleaned and packed under the most careful inspection. There is no chance of adulteration or bad mixture.

Lubbock Sudan Grass Seed is absolutely pure, genuine and thoroughly reliable. It has been grown under the supervision of Texas Sub-Station No. 8, located in Lubbock County, V. L. Cory, Supt., and every field has been officially inspected, certified to and passed before harvesting.

WARNING—We are the only authorized agents for selling LUBBOCK ASSOCIATION GUARANTEED SEED. Be sure that all seed you buy has our name and trademark stamped on the bag. None other is genuine. This is the only way you can get protection from adulterated seed and insure a profitable harvest.

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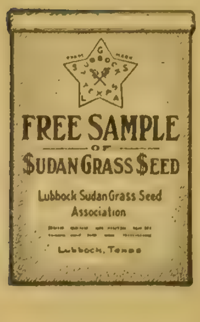

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Small Fruits Vegetables

VEGETABLE GARDENING IN THE SACRAMENTO VALLEY FOR THE MONTH OF OCTOBER

Written for California Cultivator by S. S. Rogers

The planting calendar for this month includes vegetables which are more or less resistant to frost. Many vegetables can be grown to good advantage at this time of year, planting such crops as beets, turnips, carrots and other root crops which are especially adapted to the cooler weather. There is also each year a large acreage devoted to growing winter peas, cabbage, cauliflower, lettuce and onions. As this month is especially favorable for planting peas, onions and lettuce, the following article, which takes up somewhat in detail the culture of these crops, might be of interest at this season:

Growing Winter Peas

Peas which are planted during this month generally command good prices in the markets, for at the season of the year when they mature this vegetable is somewhat of a luxury. Peas do best on a rather heavy, rich soil, and are suited to many localities through the central and southern portion of the valley.

The preparation of the soil should be thorough before the seed has been planted, and unless there is considerable moisture in the soil it will be found advisable to irrigate thoroughly before planting. The writer has tried several methods for preparing the soil at this season of the year, and the best results were obtained by irrigating, followed by plowing as soon as the land is in proper condition. After being plowed the field should be worked down as soon as possible and planted.

Seed can be sown in drills or in hills from two to three feet apart. The latter method aids somewhat in the picking, and if this is to be pursued, about one dozen peas should be dropped in the hill, planting from one to two inches deep, varying somewhat according to the character of the soil, planting deeper in soil which dries out rapidly than in the heavier soils which retain the moisture longer. The rows are generally planted far enough apart to allow cultivation with horse-drawn implements.

There are several varieties which can be grown, the choice depending somewhat on the local market. The Stratagem, Telephone and Premium Gem will be found very satisfactory to plant. The latter variety is a small pea, although sweeter in flavor than either the other two.

Growing Winter Lettuce

Winter lettuce should be planted during this month, and will be found a very satisfactory vegetable to grow. There are two methods for growing this crop: One is by planting the seed directly in the field; the second by planting the seed in a hotbed or cold frame and transplanting the young plants after they have attained the desired size.

Before the ground is to be planted to lettuce it should be thoroughly prepared, having the moisture well up to the surface and free from all clods. It is better at this season of the year to plant the young plants in raised beds, which have been previously described in the columns of the California Cultivator. If the Los Angeles variety is to be grown, the plants should be set 15 inches apart. If a smaller variety, such as the California Cream Butter or the Hanson, the plants should be set one foot apart. There are several varieties of lettuce grown throughout this valley, but the Los Angeles has been found the most satisfactory.

Culture of Onions

Growing winter onions in the different parts of this valley which are suited to their culture has been very successful. The common method for producing onions at this season of the year is by planting seed in cold frames or in the open, and transplanting the young plants during November or December. The seed is generally planted in hotbeds during September, although it is not too late to plant them during the early part of this month. The young plants should be ready for transplanting during November and December, maturing a crop in the spring, at which time this vegetable commands a good price. In a future issue of the California Cultivator the field culture of this crop will be dealt with in detail.

"SOIL MANAGEMENT"

"Soil Management," by the late F. H. King, D. Sc., published by Orange Judd Company, New York, $1.50 net. The Cultivator will be glad to secure the book for its subscribers at the above price, or including a year's subscription to the Cultivator, at $2.35 postpaid.

"This volume is the outgrowth of the remarkable soil investigations of the late F. H. King, of the University of Wisconsin. Professor King had projected a book on soil management many years ago. For the past ten years he had been assembling material with this idea in mind. His untimely death prevented the fulfillment of this purpose, but fortunately for the agricultural and scientific world his widow, Mrs. C. B. King, has brought together such of his papers and lectures as contain materials that he would have worked into an organized form. His study of Chinese, Korean and Japanese agriculture was part of his plan for the work on soil management, which he was unwilling to put forth until he knew something of this oldest management with its present marvelous results."

It would please us very much if our readers, when they have occasion to write to an advertiser, would say that they saw the advertisement in these columns. Such a statement might operate to the advantage of the reader. Surely it would place him at no earthly disadvantage, so you would better do it.

There are 12 chapters in the book, touching upon productive capacity of fields, principles governing productive capacity, functions, availibility and conservation of moisture, soil moisture and plant feeding, principles and practice of mulches, why lime soils are strong, physical features of soils, development and maintenance of good conditions, conservation and application of water, reclamation of swamp lands. The last chapter touches upon agriculture of three ancient nations and is the work of Mrs. King from notes made by her late husband when they were on their trip through Oriental lands.

The book is almost as fascinating as "Farmers of Forty Centuries," which we doubt not many of our readers have in their libraries.

Not all of the surplus income from the farms should be returned to it in buildings, fences, wells, improved machinery, etc. The home should have its share of improvements, which may be termed an investment. These are an investment, because they bring in dividends in human happiness as a result of comfortable living.

A great many people plant their gardens as they do the farm crops; they plant all at once and have an abundance for a short time and then have nothing the rest of the year.

No burden is so heavy as the one we are trying to shirk.

Legal Queries

Louis B. Stanton, attorney, 243 Wilcox Building, Los Angeles, will answer legal queries in this department.

Immediate mail replies cannot be given except where fee to Mr. Stanton is paid. When replies are wished in Cultivator address query to 115½ N. Broadway, Los Angeles.

Citizenship of Wife

May a woman, native of this state, be allowed to register, whose husband is a foreigner with only first papers?—Subscriber.

A woman upon marriage acquires the status of her husband, and is a citizen of such country as that husband may be.

Powers of Railroad Commission

What are the powers of the railroad commission—that is, can the commission break a contract if considered unfair? Does releasing one party on a contract release the other? Is there any appeal from the decision of the railroad commission?—Subscriber, Madera.

The railroad commission has very extensive powers, but the constitution of the United States provides that no state may pass any act impairing the obligation of a contract. It has been frequently thought that the railroad commission of this state has impaired the obligation of contracts, but no case has yet been decided in the federal courts. As a general rule a release from the obligation of a contract upon the part of one party thereto would release the other. An appeal may be demanded from a decision of the railroad commission by writ of review to the supreme court of this state, but if a federal question is involved or if the question arising under the laws or statutes intrudes into the matter, the case may be filed in the federal courts.

Chattel Mortgage

A, B and C take a three-year lease on a ranch and are joint owners of stock and implements. A left the ranch six months ago and has not returned since. He placed a chattel mortgage on said property without the knowledge of B or C, and, as I understand it, swore to an affidavit that he is sole owner of said property. In how far can B and C be held responsible, or can any foreclosure be made on the ranch? The whereabouts of A is not known.—Subscriber.

It is quite important to know whether A, B and C were copartners or merely tenants in common. If they were tenants in common, as appears from the communication, it is clear that one tenant cannot, unless specially authorized to do so, sell or dispose of more than his own interest; and a sale, conveyance or encumbrance upon the property held in common by one tenant would have no effect upon the title or interest of his cotenants in the absence of prior authority or subsequent ratification, expressed or implied, and it carries only the undivided interest of the grantor, whatever the description. Non-signing cotenants may recover the value of their undivided interest or may claim cotenancy with the vendee or mortgagee. The mortgagee of a person's share of firm assets takes subject to all the equities of the copartners of the mortgagee. Of course, unless you take active measures to establish your rights in court you may lose your property. Delay in a case such as you state may be fatal to your case under the doctrine of implied ratification and laches.

Title to Homestead

If a husband files on a homestead would the wife have to live there in order to get a deed to the land? If the wife's health is such she can't live there, can they get a deed?—Subscriber, Riverside.

Residence upon a homestead under United States land laws is absolutely necessary to acquire patent thereto; it matters not where a man's wife's residence is, his residence must be upon the land. It is possible to commute the five years' residence by paying $1.25 an acre at the expiration of 14 months.

Statute of Limitations

In regard to note of $166.50, dated the 7th day of September, 1905, payable 30 days after date and showing payment endorsed upon the back in the sum of $100, under date of March 1, 1910.

The statute of limitations upon a promissory note is four years after date when same is due. This time may be extended by making payment upon such a note, whereupon the four-year period commences to run anew; thus in the present instance the four-year period expired on the 28th day of February, 1914. An acknowledgment in writing of the debt, even after the statute has run, will renew the period of the statute. A note upon which the statute of limitations has run is nevertheless a valid, enforceable obligation, providing the party does not affirmatively plead the statute of limitations.

Damages

An intoxicated man on the wrong side of the road ran into me damaging my motorcycle. Can I get damages from the company if the man was not working for it at the time? What procedure should I take to get damages?—Subscriber.

According to your statement of facts the man with whom you collided was evidently upon an excursion of his own. The employer for whom he worked could not therefore be held, although it is very clear that the man himself could be held for the damages to your motorcycle. A case of this nature you should take to an attorney to draw your complaint and attend to your case for you.

Collecting Query

About two years ago A asked B the price of four sacks of coal. B replied, 70 cents per sack, but if you will take five sacks I'll make it cheaper, $2.80. A gave B check for this amount and received the coal. A few days later B wrote A that he made a mistake and sent a bill for 70 cents. Can A be sued for this amount?

According to your statement of facts it is quite clear that you paid full price demanded by the coal dealer and you would not be liable for the additional amount demanded. In any event the matter is so small that it would hardly be subject to a suit.

Unsigned

This department has received two inquiries, one from Earlimart, another from Madera, which were unsigned, the subscribers apparently not understanding the rule of this paper to pay no attention to communications which do not have names of writers attached. We do not publish names but they must be signed to communications. The Earlimart inquirer would probably be advised by mail, for the inquiry hardly has sufficient general interest to use in the columns of the Cultivator. It is an inquiry, however, which is entirely proper. The Madera inquirer would be dvised that the ceremony might be legal in Nevada but would not hold in California.

LITTLE WILLIE

Little Willie had been very naughty—so much so, in fact, that, after having reproved him several times, his mother was at last forced to severely punish him. When his father arrived home in the evening he at once perceived that Willie's eyes were suspiciously red. "What's the matter, sonny?" he cried. "Oh, nothing," responded Willie uneasily. "Come, don't be frightened," said the father, in coaxing tones. "Tell me all about it; I want to know." Willie remained silent for some time, then he suddenly burst out: "Well, if you must know, I've had a thundering row with your wife." — Pearson's Weekly.

COVER CROPS

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Melilotus
Burr
Clover
Vetches

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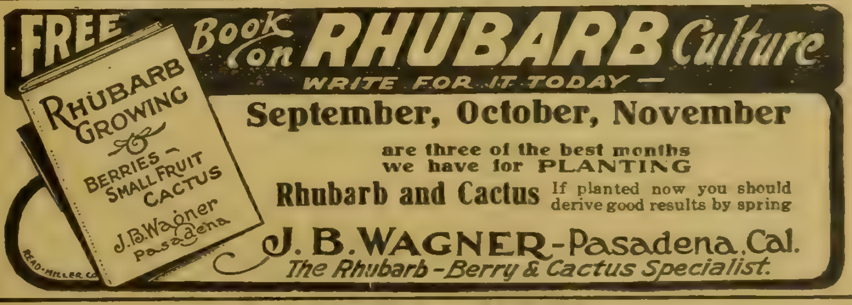

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Rural Californian combined with the California Cultivator

A Journal of Horticulture and Agriculture

By
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Thursday, Oct. 15, 1914

OUR ADVERTISERS RELIABLE

We guarantee our subscribers against loss through dishonesty of any advertiser in the Cultivator. We do not attempt, however, to adjust trifling differences between subscribers and honest, responsible advertisers, nor will we pay the debts of honest bankrupts. Notice of complaint must be sent us within 30 days from date of the transaction, and the subscriber must have mentioned the Cultivator when writing the advertiser.

APPLE DAY.

Everybody eat an apple on next Wednesday, which is National Apple Day. The United States never had a finer nor a better apple crop. Europe hasn't a very good stomach for apples this year so Americans must eat more than ever. They will probably not be higher priced. Eat an apple; eat a box.

TREES TO PLANT.

Nurserymen of California are discussing matters concerning their business at San Diego this week. The nurserymen of this state are a great factor in its development, for the greatest of our industries is the fruit industry and the nurserymen must supply the trees for the orchards which are its foundation. It is wise that the people who follow this calling should meet and discuss methods of production of better stock and of protecting and advancing their interests.

NOVEMBER PHOTOS.

Photos for the November contest should reach this offiice not later than the morning of October 29. Do not wait to mail until that day, for photos would not reach the office in time, though if belated ones come they will be held over for the December contest. The prizes are: $2.00 for first, $1.00 for second best and a six months' extension of subscription for all who send photos which are retained for later use in our columns. The Cultivator already has a fine supply of California home life scenes, but we wish more and hope this month's contest will bring out another half hundred photos to compete for the prizes.

DAIRYMEN AT MODESTO.

Thursday, Friday and Saturday of this week are the days of the annual convention of the dairymen and creamerymen. The convention this year is held at Modesto in Stanislaus County, the county which boasts of being the greatest producer of dairy products in California. It boasts loud and long, partly because the banner has been held from almost the beginning of the state by Humboldt County, but within the past year Stanislaus has passed the farther northern county. Humboldt is still some producer of butterfat and the state is proud of her. We doubt not many delegates will come from Humboldt to the state convention at Modesto and take honors in the butter scoring contest which is a feature of the convention. The dairy industry of California is growing rapidly, and that is wise, because no dairy country ever existed which was not a rich one.

48 ON BALLOT.

The amendments to the constitution initiative and referendum measures, to be voted upon at the polls this year pass a great number of questions up to the people of California to study. Daily and other papers are discussing more or less certain measures, but we have seen no complete list of them given as they will appear on the ballot. In order to give the readers of the Cultivator opportunity to at least get a general idea of their order on the ballot we give in the fewest words possible the following list of the various measures as they will appear.

Of the 48 measures 22 are constitutional amendments proposed by the legislature; four are bonding propositions submitted by the legislature; two are acts of the legislature, or laws which were duly signed, but submitted to referendum; two are bonding propositions submitted by initiative petition; two are amendments to the penal code submitted by initiative; five are general laws submitted by initiative.

Abbreviations are: S. C. A., Senate Constitutional Amendment; A. C. A., Assembly Constitutional Amendment; I. C. A., Initiative Constitutional Amendment; B. P. S. L., Bonding Proposition Submitted by Legislature. The measures are:

1 CALLING CONVENTION FOR REVISION OF CONSTITUTION. Concurrent resolution submitted by legislature.

2 PROHIBITION. Initiative. Prohibits manufacture, sale, gift or transportation of intoxicating liquors.

3 EIGHT HOUR LAW. Initiative. Makes it a misdemeanor to employ any person more than eight hours in one day or more than 48 in one week.

4 ABATEMENT OF NUISANCES. Referendum. Closes questionable lodging houses.

5 INVESTMENT COMPANIES ACT. Referendum. Creates state corporation department having control of corporations. Known as Blue Sky Law.

6 WATER COMMISSION ACT. Referendum. Creates state water commission for control of all waters in state.

7 LOCAL TAXATION EXEMPTION. A. C. A. Empowers any county or municipality to exempt from local taxation any personal property except franchises.

8 EXEMPTING VESSELS FROM TAXATION. S. C. A. Exempts from taxation until Jan. 1, 1935, except for state purposes, all vessels over 50 tons.

9 REGULATING INVESTMENT COMPANIES. Initiative. Authorizes governor to appoint auditor of investments.

10 ABOLITION OF POLL TAX. Initiative.

11 UNIVERSITY OF CALIFORNIA BUILDING BOND ACT. Initiative. Provides bond issue of $1,800,000.

12 CONSTITUTIONAL CONVENTIONS. A. C. A. Provides method of choosing delegates at non-partisan primary election and authorizes legislature to submit for adoption plan of selecting delegates, and that conventions shall meet within nine months after election.

13 QUALIFICATIONS OF VOTERS AT BOND ELECTIONS. Initiative. Provides that no elector may vote on bonded indebtedness unless property owner.

14 VOTING BY ABSENT ELECTORS. Initiative. Provides for issuance of certificate of identification and ballot to absent voter.

15 DEPOSIT OF PUBLIC MONEY. I. C. A.

16 CONDEMNATION FOR PUBLIC PURPOSES. S. C. A.

17 EXPOSITION CONTRIBUTION BY ALAMEDA COUNTY. S. C. A.

18 NON-SALE OF GAME. Referendum. Makes misdemeanor of buying or selling game.

19 CONSOLIDATION OF CITY AND COUNTY, AND LIMITED ANNEXATION OF CONTIGUOUS TERRITORY. I. C. A.

20 PRIZE FIGHTS. Initiative Amendment to Penal Code.

21 CITY AND COUNTY CONSOLIDATION AND ANNEXATION WITH CONSENT OF ANNEXED TERRITORY. I. C. A.

22 LAND TITLE LAW. Initiative Amendment of Act for Certification of Land Titles. Popularly known as Torrens Law. Provides for certificate of title issued by state and insures greater safety and economy in real estate transfers.

23 ELECTIONS BY PLURALITY, PREFERENTIAL VOTE AND PRIMARY. A. C. A.

24 ASSEMBLY PAYROLL EXPENSE. A. C. A. Increases amount allowed for expenses of officers and others of the state assembly.

25 ADOPTION AND AMENDMENT OF MUNICIPAL CHARTER. A. C. A.

26 LEGISLATIVE CONTROL OF IRRIGATION, RECLAMATION AND DRAINAGE DISTRICTS. A. C. A.

27 COUNTY CHARTERS. A. C. A.

28 REGULATION OF PUBLIC UTILITIES. A. C. A. Gives greater powers to railroad commission, especially power over public utilities in municipalities.

29 INCORPORATION OF MUNICIPALITIES. A. C. A.

30 IRRIGATION DISTRICTS CONTROLLING INTERNATIONAL WATER SYSTEMS. A: C. A. Provides that irrigation districts may acquire control of stock in international water systems which have title to part of system situated in foreign country. A. C. A.

31 VALUATION OF CONDEMNED PUBLIC UTILITIES BY RAILROAD COMMISSION. A. C. A.

32 ELECTION OF U. S. SENATOR. A. C. A. Eliminates provisions of present section preventing governor from being elected during term of office and provides that senators shall be elected by people of state.

33 PUBLIC UTILITIES IN MUNICIPALITIES. S. C. A. Authorizes municipal corporations to acquire and operate public utilities.

34 TAXATION OF PUBLIC PROPERTY. A. C. A. Declares taxable all lands not within municipality or county owning them by county within whose boundaries they lie.

35 SACRAMENTO STATE BUILDING BONDS. B. P. S. L. Provides $3,000,000 bonds for state buildings at Sacramento.

36 FOR OR THE AGAINST THE SAN FRANCISCO STATE BUILDING ACT. B. P. S. L. Provides $1,000,000 bonds for state building in San Francisco.

37 FOR OR AGAINST THE STATE FAIR GROUNDS BONDS. B. P. S. L. $750,000 bond for improvement of fair grounds.

38 LOS ANGELES STATE BUILDING BONDS. Initiative. Provides for $1,250,000 for state building and site in Los Angeles.

39 SUSPENSION OF PROHIBITION AMENDMENT. Initiative. Provides that if amendment to constitution, which is number 2 on the ballot, passes that the section relating to manufacture and transportation for delivery outside the state shall be suspended till Jan. 1, 1916.

40 EXTRA SESSIONS OF DISTRICT COURTS OF APPEAL. A. C. A.

41 MISCARRIAGE OF JUSTICE. S. C. A.

42 PLACE OF PAYMENT OF BONDS AND INTEREST. S. C. A. Permits payment of interest at any point in U. S.

43 EXEMPTING EDUCATIONAL INSTITUTIONS FROM TAXATION. S. C. A.

44 MINIMUM WAGE. A. C. A. Authorizes legislature to establish minimum wage for women and minors.

45 ONE DAY OF REST IN SEVEN. Initiative. Prevents work more than six days per week and more than 48 hours in week.

46 DRUGLESS PRACTICE. Initiative. Creates state board of drugless physicians.

47 PROHIBITION ELECTIONS. Initiative. Prohibits state election on question touching upon manufacture and transportation of intoxicating liquors for eight years.

48 FOR OR AGAINST THE SAN FRANCISCO HARBOR IMPROVEMENT ACT OF 1913. B. P. S. L.

Agricultural News Notes

Texas citrus growers expect to ship something over 2000 cars of fruits this year.

Census reports of Germany showed that on June 2, 1914, that country had over 25,000,000 pigs.

Florida's coming citrus crop, for the season 1914-15, is estimated at about 9,000,000 boxes, an increase over last season's shipments of 1,000,000 boxes.

Experiments in alfalfa breeding and value of alfalfa meal in feeding hogs are being carried on at the Colorado agricultural experiment station at Fort Collins.

Officers of the Okanogan national forest in the state of Washington are installing powerful signal lanterns for night use in reporting forest fires from lookout peaks.

In addition to the difficulty of harvesting crops in France by inexperienced hands, mostly women and children, the stormy weather has greatly handicapped the work.

The first shipment of cotton direct from this country to France since the war began was made last week. It went to Havre. About half the cotton exported this season has gone to Japan.

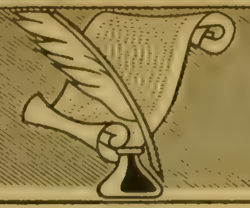
"The cultivation of citrus trees for profit is now an established industry in all the Australian states except Tasmania," says the Fruit World of Australasia. Does that interest California citrus growers?

In connection with the buy-a-bale-of-cotton movement which has been discussed in the newspapers, the Nashville, Chattanooga and St. Louis has announced that it will buy 125 bales of cotton at 10 cents a pound.

"There have been all kinds of predictions as to the grapefruit crop of Cuba and the Isle of Pines, and perhaps no other crop has been over-estimated more than this," writes a buyer who has been visiting those sections. Even some of the growers on the Isle of Pines have been estimating the yield to be between 250,000 and 500,000 boxes. "Now there is every indication that the early estimates can be cut in two."

A federation of egg circles was this spring formed in Kansas with central organization and headquarters at Emporia. Eggs must be gathered at least once a day, twice on very hot or very cold days. They must be kept in a cool, dry place and marketed at least twice a week. Every member agrees to pen up or otherwise dispose of all male birds from June 15 to September 1. Breach of rules is punishable by loss of membership.

Agricultural News Notes of the Pacific Coast



Northern California

Sacramento Valley day at the Panama-Pacific Exposition will be August 7, 1915.

The Davis unit of the Yolo County farm bureau held a big meeting yesterday.

There is some agitation in Shasta County for the appointment of a livestock inspector.

The shipment of fresh figs has been an important item in Auburn's fruit industry this season.

Woodland, Yolo County, is completing arrangements for a harvest festival to be held October 23.

Eldorado County growers of Bartlett pears are most enthusiastic over the outlook in the pear industry.

A fruit box shook factory at Placerville reports shipments to date this season amounting to over 100 carloads.

Olive culture is becoming more important yearly in Shasta County, where there is one orchard of 120 acres.

The Mendocino Farmers' and Apple Growers' Association is making plans for an apple show to be held the 27th of October.

Yolo County expects to plant several thousand acres to rice the coming season, as this year's plantings have been so successful.

At the meeting of the Newark center of the Alameda County farm bureau on September 28 there were 250 people present.

It is claimed that California will harvest 500,000 sacks of rice this year, most of which will come from Butte and Colusa Counties.

Eldorado County has shipped out this year over 300 carloads of fresh fruits, most of which was consigned to the Atlantic seaboard.

Heavy shipments of barley are going from San Francisco to foreign ports. One British steamer left last week with 8,000 tons of barley consigned to Antwerp.

October 30 has been set apart by the farm bureau of Yolo County as Harvest Festival. It is to be held at the county seat and prizes will be offered for exhibits.

Farm Adviser Searles, of Yolo County, reports during the month 57 personal visits to farms in the county. During the same time 80 cows have been added to the County Cow Testing Association.

An organization whose members are composed of poultrymen from all parts of the state was formed at the state fair held in Sacramento. It is to be known as the California State Poultry Association. N. E. Luce of Los Angeles is president and the secretary is C. A. Wilkins, Sacramento.

In a conference held at the university farm recently by members of the university faculty and representatives of the state dairy bureau and the Milk Improvement Association of San Francisco, a state wide movement was launched to secure standard grading of milk for California on a plan similar to that now in effect in the state of New York.

Central California

The Porterville cannery is experimenting in the canning of dried peaches.

Ducor, Tulare County, has already shipped out 125,000 bags of wheat and barley.

Kings County's 16th annual fair was held last week at Hanford and was attended by thousands of visitors.

The board of supervisors of Tulare County has passed an ordinance requiring fumigation of citrus trees.

A cooperative packing house is being planned for Ahwahnee, Madera County, for use of apple growers.

Porterville canneries have started packing olives. About 125 tons is estimated as the yield for this section.

The citrus packing houses of Porterville have decided to employ day labor instead of box labor in handling oranges.

Greenfield, in Monterey County, captured first prize for most artistic table display at the California apple show just closed at San Francisco.

A number of fruit growers of the state met at Sacramento recently and discussed introduction of a standard fruit law before the next legislature.

Forest Supervisor Patterson reports more than 100 fires in the Sequoia national forest this season, most of them brush fires that did little serious injury.

Farm Adviser Mayhew of Madera County will visit Oakhurst October 20, 21; Nipinnawasee, October 22; Coarse Gold, October 24, 26; North Fork, October 27, 28.

The Visalia Poultrymen's Association announces the opening of a cooperative grocery store to sell supplies to members. The association has an active membership of 68.

The annual state convention of Farmers' Unions will be held in San Jose November 10-11. The Santa Clara County convention will be held the 24th of this month, also at San Jose.

Secretary Eberhart of the Fresno County fair announces that the week's attendance was over 55,000, an increase of 13,000 over the attendance at last year's fair. Total gate receipts were $36,000.

The counties convention of the California Development Board will be held in Santa Rosa, October 23-25. The subject to be discussed is "Legislative Measures Now Under Consideration in California."

The California Inland Waterways' Association held a three-days' session at Stockton the last week in September. The principal topic of discussion was conservation of waters for irrigation purposes.

It has been determined not to hold a citrus fair at Fresno this winter. The principal objection to the proposal for holding the fair is that it will, in a sense, detract from the exhibits at the Panama-Pacific.

Fruit workers who have been idle since the closing of the cannery season at Exeter began packing grapes October 10. By the end of the grape season the navel orange packing season will open.

Southern California

The duck and quail seasons open October 15, the dove season closes November 1.

The suggestion has been made that a Southern California fair be held at San Diego.

The Riverside district has shipped to date 4200 cars of citrus fruit for the season.

Ranchers of Escondido in San Diego County are manifesting much interest in Sudan grass for feed.

The Indian fiestas are passing since the order came from Washington that no gambling will be allowed.

The celery crop of Orange County is in fine condition. The total acreage at the present time is about 800.

The slight rain which fell the first of the month has been of considerable benefit to cover crops in citrus groves.

Celery shipments to the East from Southern California will probably start the first of December. Orange County expects to ship over 500 carloads.

A new citrus organization in the La Habra Valley is about to begin the erection of a packing house. Practically all the members are growing lemons.

Winthrop Howland, raiser of Swiss milch goats at Redlands, captured a number of prizes at the state fair. There is talk of establishing a goat cheese factory at Redlands.

From San Diego comes the report that Japanese interests have arranged to buy all the Imperial Valley cotton crop, to bring it by motor truck to San Diego and ship it from that port.

Arroyo Grande has become one of the largest globe artichoke growing sections of the state. The output amounts to several thousand dollars a month during the harvesting season.

The green chile crop of Garden Grove in Orange County, it is estimated, will this season be worth $300,000. The same section is now planting pimientos on a commercial scale.

Low prices prevailing in Los Angeles for butterfat are believed by some creamery operators to be due to the new 90 per cent score recently adopted. San Francisco demands a higher standard.

Operators of sugar beet factories have been informed that the conference between sugar manufacturers and the department of commerce has resulted in the decision to secure beet seed directly from Rotterdam.

The shipping house of the La Habra Walnut Growers' Association is now in operation. The president of the association reports the crop smaller than was estimated early in the season, but of finer quality than was anticipated.

Sugar beet growers and factory men of Southern California and the San Joaquin Valley met last week in Los Angeles and took preliminary steps for permanent organization of an association the purpose of which is largely educational, the study of beet culture in all its aspects, particularly the problems presented by diseases and pests.

The Coast

The Utah agricultural college is recommending growers to plant English walnuts.

Stock raisers in Cochise County, Arizona, report cattle in better condition than for years.

Two million dollars' worth of cattle have been contracted in northern Arizona for delivery this fall.

Apple growers of Wenatchee, Washington, are carrying on a strenuous fight against Washington's proposed eight-hour law.

The Portland hop market, it is reported, is forcing down prices to growers. Some sales have been made as low as 14 cents.

The Arizona agricultural experiment station at Tucson is issuing circulars telling farmers how to prevent smut on wheat, barley and oats.

The United States department of agriculture estimates this year's apple crop of the state of Washington at 7,200,000 bushels, as against 6,900,000 in 1913.

Threshing in the grain fields of Montana will not be finished until the end of the month. Growers are generally holding, with expectation of getting better prices.

The state forestry department of Arizona is conducting demonstrations in preservative treatment of fence posts at the various fairs now being held throughout the state.

Orchardists and commission men of eastern Washington are getting together in an effort to halt the price cutting which has been a ruinous feature of the early fall market.

Willcox, Arizona, is making big plans for its fair, to be held the last three days in the month. There will be exhibits of agricultural products, also household and educational exhibits.

Farmers of the Salt River Valley of Arizona have decided that they want a farm adviser. A general committee has been appointed to organize farm bureau work in the different sections of the valley.

The next annual meeting of the Arizona Cattle Growers' Association is scheduled for Douglas some time in January. At the same time and place cattle men of Cochise County will hold their annual meeting.

Fruit growers of the Spokane Valley in Washington estimate damage to the fruit crop from the recent wind and rain storm at between $10,000 and $25,000. One grower states that 1,000 boxes of apples were blown off his trees.

A Seattle representative of the apple growers is urging them not to rush their fruit on the market, but place it in cold storage and then scatter to the smaller communities throughout the United States, instead of piling all the shipments into the big centers.

The Arizona experiment station has turned over to the reclamation service 175 head of grade Tunis sheep, to be used in cleaning Johnson grass from the government canals and laterals. It is claimed that 90 days' feeding on Johnson grass will place sheep in excellent condition for market.

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Live Stock and Dairy

CURING MEAT ON THE FARM

The best way to eat meat is to eat it while fresh, for there is no way of preserving it that will retain all the nutrition and all the flavor. It is, nevertheless, frequently desirable to cure meat at home, and there is no reason why this can not be done satisfactorily and economically. Salt, sugar or molasses, baking soda, and a little saltpeter are the only ingredients necessary.

Ordinarily the curing of meat should be begun from 24 to 36 hours after the animal is slaughtered. This allows sufficient time for the animal heat to leave the meat entirely, but not sufficient to permit decay to set in. Once the meat is tainted, no amount of preservatives will bring back its proper flavor. On the other hand, if salt is applied too soon, obnoxious gases will be retained and the meat will possess an offensive odor. It is also impossible to obtain good results when the meat is frozen.

Three useful recipes for popular forms of cured meat are given below. The only equipment necessary for them are the ingredients already mentioned and a clean hardwood barrel, or a large stone jar or crock. In considering these recipes it is well to remember that, on the whole, brine-cured meats are best for farm use. They are less trouble to prepare and the brine affords better protection against insects and vermin. A cool, moist cellar is the best place for brine curing. The cellar should be dark and tight enough to exclude flies and vermin.

Corned Beef.

The pieces commonly used for corning are the plate, rump, cross ribs, and brisket, or, in other words, the cheaper cuts of meat. The loin, ribs, and other fancy cuts are more often used fresh, and since there is more or less waste of nutrients in corning, this is well. The pieces for corning should be cut into convenient-sized joints, say five or six inches square. It should be the aim to cut them all about the same thickness so that they will make an even layer in the barrel.

Meat from fat animals makes choicer corned beef than that from poor animals. When the meat is thoroughly cooled it should be corned as soon as possible, as any decay in the meat is likely to spoil the brine during the corning process. Under no circumstances should the meat be brined while it is frozen. Weigh out the meat and allow eight pounds of salt to each 100 pounds; sprinkle a layer of salt one-quarter of an inch in depth over the bottom of the barrel; pack in as closely as possible the cuts of meat, making a layer five or six inches in thickness; then put on a layer of salt, following that with another layer of meat; repeat until the meat and salt have all been packed in the barrel, care being used to reserve salt enough for a good layer over the top. After the package has stood over night add, for every 100 pounds of meat, four pounds of sugar, two ounces of baking soda, and four ounces of saltpeter dissolved in a gallon of tepid water. Three gallons of water should be sufficient to cover this quantity. In case more or less than 100 pounds of meat is to be corned, make the brine in the proportion given. A loose board cover, weighted down with a heavy stone or piece of iron, should be put on the meat to keep all of it under the brine. In case any should project, rust would start and the brine would spoil in a short time.

It is not necessary to boil the brine except in warm weather. If the meat has been corned during the winter and must be kept into the summer season, it would be well to watch the brine closely during the spring, as it is more likely to spoil at that time than at any other season. If the brine appears to be ropy or does not drip freely from the finger when immersed and lifted, it should be turned off and new brine added, after carefully washing the meat. The sugar or molasses in the brine has a tendency to ferment, and, unless the brine is kept in a cool place, there is sometimes trouble from this source. The meat should be kept in the brine 28 to 40 days to secure thorough corning.

Dried Beef

The round is commonly used for dried beef, the inside of the thigh being considered the choicest piece, as it is slightly more tender than the outside of the round. The round should be cut lengthwise of the grain of the meat in preparing for dried beef, so that the muscle fibers may be cut crosswise when the dried beef is sliced for table use. A tight jar or cask is necessary for curing. The process is as follows: To each 100 pounds of meat weigh out five pounds of salt, three pounds of granulated sugar and two ounces of saltpeter; mix thoroughly together. Rub the meat on all surfaces with a third of the mixture and pack it in the jar as tightly as possible. Allow it to remain three days, when it should be removed and rubbed again with another third of the mixture. In repacking put at the bottom the pieces that were on top the first time. Let stand for three days, when they should be removed and rubbed with the remaining third of the mixture and allowed to stand for three days more. The meat is then ready to be removed from the pickle. The liquid forming in the jars should not be removed, but the meat should be repacked in the liquid each time. After being removed from the pickle the meat should be smoked and hung in a dry attic or near the kitchen fire, where the water will evaporate from it. It may be used at any time after smoking, although the longer it hangs in the dry atmosphere the drier it will get. The drier the climate, in general, the more easily meats can be dried. In arid regions good dried meat can be made by exposing it fresh to the air, with protection from flies.

Plain Salt Pork

Rub each piece of meat with fine common salt and pack closely in a barrel. Let stand over night. The next day weigh out 10 pounds of salt and two ounces of saltpeter to each 100 pounds of meat and dissolve in four gallons of boiling water. Pour this brine over the meat when cold, cover and weight down to keep it under the brine. Meat will pack best if cut into pieces about six inches square. The pork should be kept in the brine till used.

Sugar-Cured Hams and Bacon

When the meat is cooled, rub each piece with salt and allow it to drain over night. Then pack it in a barrel with the hams and shoulders in the bottom, using the strips of bacon to fill in between or to put on top. Weigh out for each 100 pounds of meat eight pounds of salt, two pounds of brown sugar and two ounces of saltpeter. Dissolve all in four gallons of water, and cover the meat with the brine. For summer use it will be safest to boil the brine before using. In that case it should be thoroughly cooled before it is used. For winter curing it is not necessary to boil the brine. Bacon strips should remain in this brine four to six weeks; hams six to eight weeks. This is a standard recipe and has given the best of satisfaction. Hams and bacon cured in the spring will keep right through the summer after they are smoked. The meat will be sweet and palatable if it is properly smoked, and the flavor will be good.

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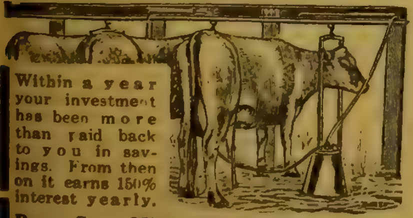

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WOOL GROWERS CONVENTION

The National Wool Growers' Association will meet in its 51st annual convention at Salt Lake City, Utah, November 12-14.

Among the topics for discussion will be national legislation, the wild animal question, better marketing of lambs, feeding sheep on the range, producing and marketing wool, the land question, national forests, railroad rates and service, running sheep in range pastures, better types of range sheep, diseases of sheep, etc. Several of these topics are of pressing importance to wool growers, and, if our flock masters are to solve them correctly, the fullest discussions must be indulged in.

It seems to me that a new era is opening before our sheep breeders, the benefits of which can only be grasped by united and concerted action. In order that the problems confronting us may be correctly solved, I most earnestly urge every wool grower and those engaged in allied branches of the industry to meet with us in Salt Lake City, Utah, November 12, 13 and 14, 1914.—F. J. Hagenbarth, President, National Wool Growers' Association.

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The farmers of Arroyo Grande, in San Luis Obispo County, possessors of one of the richest valleys of the state, have not been fully satisfied with their condition. The market for their products has been the problem. Easy matter to raise the fruits, vegetables, etc., but not so easy to find markets at satisfactory prices. The Farmers' Union has now taken hold of the matter. Having the will, they have found a way. They have incorporated and opened a general produce commission house in Los Angeles. C. A. Cheadle, a successful poultry raiser and a stockholder, is manager, working on a salary. The idea is, a square deal for everyone. Poultry and eggs are their specialty, but all kinds of produce, fruit, beans, hay, etc., are handled. Sales are made promptly if market is at all satisfactory, at the highest going prices, and returns are promptly made. The unsatisfactory methods attributed to some commission firms are conspicuous by their absence. It is somewhat on the cooperative plan, the necessary funds having been supplied by members of the Farmers' Union and the profits, if any, accruing to them. The idea is not so much to make money as to furnish a satisfactory marketing headquarters.

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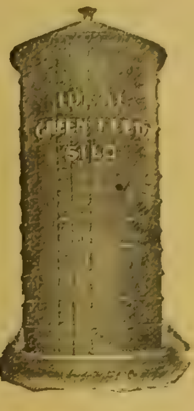

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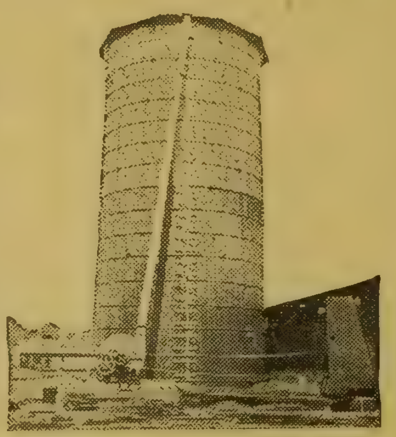

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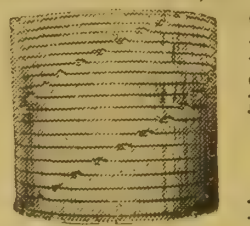

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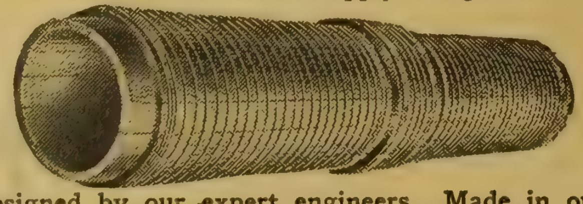

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PRODUCTION OF CLEAN MILK

Persons engaged in the production of milk and consumers interested in procuring clean, safe milk, will be interested in the factors for producing the same as outlined by the United States department of agriculture in a recent farmer's bulletin, No. 602, entitled "Production of Clean Milk." The essential factors are outlined as follows: Clean, healthy cows kept in clean, light, well ventilated stables; stable so constructed as to be easily cleansed; a clean, well-drained barnyard; clean utensils, thoroughly sterilized; clean, healthy milkers that milk with dry hands; a small-top milking pail; immediate cooling of the milk to 50 degrees Fahrenheit or lower; storage of milk at a low temperature until delivered; a separate house for handling the milk; an abundant supply of pure water.

How Milk Becomes Diseased

Bacteria, according to the bulletin, find their way into the milk from various sources. Some may come from the udder itself where they grow in the milk cisterns and ducts. The greater number, however, come from the dust of the air, the dirt from the udder and flanks, from the milker, and from unclean utensils. Disease-producing bacteria may get into the milk from cows having such diseases as tuberculosis, or from people who handle the milk, who may themselves have contagious diseases or who have been taking care of patients afflicted with such diseases as typhoid fever, diphtheria, and septic sore throat.

The consumer is sometimes responsible for the contamination of the milk. Milk bottles should not be taken into a sick room, because infectious diseases can be spread by carrying infected bottles back to the dairy farm. If bottles are left where there are contagious diseases they should not be collected by the milkman until they have been properly disinfected by the board of health. In the case of typhoid fever or other serious diseases which may be carried in the milk, it is better for the consumer to put out a covered dish for the milk or have it delivered to some member of the household. Until official permission has been granted, no milk bottles should be removed from a home in which there is or has recently been a case of communicable disease. The consumer should not use milk bottles for holding vinegar, kerosene or liquids other than milk.

Why Clean Milk Is Important

The consumer is interested in clean milk primarily because no one cares to use a food which is not produced and handled under sanitary conditions. There is a more direct interest, however, because of the danger of contracting disease which may be communicated by this means. Serious epidemics of typhoid fever, septic sore throat and other diseases have been disseminated through the milk supply. The weight of scientific evidence at the present time leads to the conclusion that tuberculosis may be transmitted from animals to human beings, particularly children, who consume raw milk containing tubercle bacilli.

Cleanliness is the greatest factor in preventing contamination. From the health standpoint there is great danger not only from the specific disease-producing bacteria previously mentioned, but from milk that contains large numbers of miscellaneous bacteria which may cause serious digestive troubles, especially in infants and invalids whose diet consists chiefly of milk. There is also the minor consideration of the loss to the consumer from milk souring or otherwise spoiling before it can be used. The cleaner the milk, the longer it will keep good and sweet.

Clean milk not only benefits the consumer, but the milk producer who will consider this subject from an unbiased standpoint will find many ways in which he himself is benefited by producing clean milk. There are a number of items in this connection which, when considered alone, may seem unimportant, yet collectively they are of great importance. Moreover, they are not only of immediate value, but have a cumulative value reaching far into the future. Tuberculin testing, for example, is not only a safeguard to the purity of the milk supply for the consumer, but is a means of assisting the producer to protect his herd against future ravages of tuberculosis.

Most producers of market milk have experienced the chagrin of having a shipment of milk refused or returned because it reached the market sour, tainted, or otherwise in poor condition. Although such milk may be used for feeding pigs, it usually means a complete loss to the producer, as it costs too much to transport it back to the farm, and because, depending on the market as an outlet for his milk, he has no means for utilizing small amounts at uncertain intervals. Another important consideration is the unpleasant effect upon the purchaser. Delivering sour or tainted milk usually results in losing the confidence of the dealer; or if it is delivered direct to the consumer, it means the loss of good customers. A reputation for clean milk means fewer complaints, a better class of patrons, and a steady market for the product of the dairy.

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Poultry for Profit

THE MOIST MASH

Written for California Cultivator by
Jean A. Koethen

The pendulum never swings so far in any given direction but that it will in time swing just as far in the opposite direction. This is just as true of feeding poultry as it is of real estate booms, and with just as good reason. We poor human beings seem to be constantly carried too far by our enthusiasms, and so we have to come back.

When I was a little girl I never heard of anyone feeding anything but a wet mash. It was usually corn meal mixed with cold water and made the chief item in the baby chick's bill of fare. If the chick died we were sorry, but we never blamed the feed. As for the hens, they were lucky to get corn. Why bother them with a mash?

When I came back, after many years, to raising chickens, every one was talking about the dry mash. There must have been a gradual development of the moist mash before this, from the simple corn meal and water of my childhood to a balanced mixture of ground grains mixed with cooked vegetables and table scraps or cooked meat. Mr. Felch speaks of it in his book, written in 1885, and gives some very elaborate formulas, a new one for every day in the week, for the breakfast mash. Evidently when the wet mash became too elaborate the pendulum had to start somewhere, so it swung slowly toward the less laborious dry mash.

It must have been about the time Mr. Felch's book was written, perhaps earlier, that the Little Compton poultry colony in Rhode Island came into existence. This colony has been one of the most successful examples of a community specializing in market eggs, and is still in existence, if I am not mistaken. The Little Compton egg farmers followed the simplest of methods. The hens were housed in colony houses which were scattered over many acres of pasture land, entirely without fences, and foraged for a good part of their living. In the morning the egg farmer made a trip among his houses with his "dough cart," carrying a wet mash of cooked vegetables and ground grain, and at night he went around again with their evening meal of grain. For the rest the birds "hustled," and being Rhode Island Reds, they hustled to some purpose.

The moist mash proved, after years of trial, to be rather laborious, and like all methods of feeding, it was easily abused. Left in the troughs in the sun, it soured and produced various ailments when it was eaten. Carelessly mixed, so that it was sloppy or gummy, it was found to cause bowel trouble. As the number of fowls kept on a single plant grew larger and larger, it was found almost impossible to mix a wet mash for so many, and so presently the dry mash, fed in hoppers, came into vogue, and poultrymen and writers were loud in their condemnation of the wet mash. Hardly a good word was said for the wet mash anywhere for several years.

But the moist mash had too many good qualities to permit of its being abandoned forever, and of late a sentiment has arisen in its favor again. We are beginning to learn, maybe, that no method is wholly bad or wholly good, and that the same rule cannot be applied to all circumstances and conditions of fowls. Just recently Tom Barron, the great English breeder of White Leghorns, has said in an interview that he uses the moist mash exclusively, so we may now expect it to become fashionable again.

The advantages of the moist mash over the dry, as I see them, are the following:

It permits of greater variety in the feeding. Many things may be incorporated in the wet mash which can hardly be fed in any other way. Potatoes, for instance, are a valuable food if used in moderation. Turnips, carrots, beans, peas and other vegetables which fowls will not eat raw can be cooked and mashed and mixed with ground grain in the moist mash. Scraps of fresh meat, "pluck" and fish refuse can be cooked and fed in the same way, and stale bread, which is a very valuable feed and often to be had cheap, may be made palatable in this way. In fact, there is nothing that is used on the family table which cannot, if it is to be had at a reasonable price, be used.

It is economical, because it permits of using table scraps, potato parings and waste vegetables.

It can be fed warm, and this on a cold morning is a distinct advantage, especially when it is well seasoned with pepper, mustard and salt. Chickens like something warm in the morning as well as we do, and while it is considered better for some reasons to feed the warm mash at night, many poultrymen find it hard to get away from the feeling that fowls get more good out of a warm mash in the morning than later in the day. My reason tells me it is wise to feed the mash at night, so the hens can go to roost with that well-filled feeling which is so comfortable, but sentiment leads me to feed it in the morning, because the hens are so eager for it.

The hens like it better, when properly prepared, than they do a dry mash, and this is a very good reason indeed. The tastes of the fowls must be consulted if we are to get the best work out of them, and they do like a rich, well-seasoned warm mash.

There are several ways of preparing a moist mash, and each one, those who use it will tell you, is the best ever. My way is to put all table scraps and vegetable refuse in a kettle after dinner at night—potato peelings, tomato peelings, apple parings (if there are not too many), cold mush from breakfast, bits of stale bread, anything that is left over from the day, and cook it well. When it is nearly done I add a couple of handfuls of corn meal and a little salt and pepper. After this is taken from the stove I thicken it with bran and middlings—it really doesn't matter just how much of each—till it is dry and crumbly, and add a handful or two of beefscrap if there is no meat in the mash mixture. Sometimes I use the dry mash I feed in hoppers, just as it is, but if the cooked mixture is quite rich I think bran and middlings or bran alone will answer.

After my mash has cooled till it is right to eat I cut up lettuce, or sometimes an onion or two, or if I have no lettuce, a little green alfalfa. This is what the hens like particularly, and they all make a grab for the green. When it is gone they come down to the real mash.

Another way of making this mash, when green feed is scarce, is to add alfalfa meal before any ground grain is put in and just let it steep a little. Alfalfa meal does not take the place of green feed, but it is a little better than nothing.

I always feed the dry mash in hoppers, whether I give a moist mash or not, and I am careful not to feed more of the moist mash than the hens will clean up in a few minutes. It is just an appetizer, as you might say, and not enough to make them lazy, which is the objection most often made to warm mash in the morning. If I had sour milk or buttermilk I should always feed a moist mash, and always mix it with the milk, except for just enough water to cook the vegetables. There is no better food for poultry of

(Continued on Page 383)

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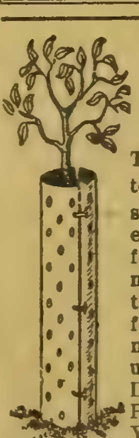

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QUESTIONS AND ANSWERS

(Continued from Page 369)

through the stem) and with a hooked peg pegging it into the ground about one-half inch below the surface. Then to a light stake tie the point of the shoot in an upright position, which will open the cut or slit, care being taken not to sever entirely the point of the shoot from the main stem. Next cover the cut part with light sandy soil and give a good watering. Keep the soil moderately moist, and in a few weeks the layers will be rooted, when they may be severed from the parent stem and planted where they are to bloom."

We take it the layering could be readily done at this time of the year, and perhaps it is not too late to start the cuttings. Roses are easily started from hardwood cuttings, say six, eight or ten inches long, these to be made when the bush is as nearly dormant as possible, imbedded from two-thirds of the length of the cutting in sandy soil and irrigated the same as any garden crop. The nurseryman uses shorter herbaceous cuttings and roots in sand with under heat in the glass house, but often fine results are had from ordinary garden propagation. To keep carnations from excessive blooming best results are secured by pinching, also as soon as the flower begins to fade be sure it is cut.

Permanganate of Potash

How much permanganate of potash to a gallon of drinking water is necessary to cure roup in fowls?—Subscriber, East Bakersfield.

Permanganate of potash in the drinking water will not cure roup. It is a mild antiseptic, and if fresh and strong may perhaps kill disease germs in the water, but to be effective in roup it must be brought into contact with the diseased tissues of the head and eyes. The treatment is as follows: Prepare a solution of premanganate of potash, about a tablespoon of the permanganate to a quart of water, in a cup or pail of such size that the fowl's head may easily be immersed in it. Press the nostrils together between thumb and forefinger in the direction of the beak two or three times, and press also between nostrils and eyes in an upward direction. This is to loosen the discharge in nostrils and eyes. Then plunge the bird's head into the permanganate of potash solution and hold it there for 20 to 30 seconds. Repeat this treatment twice a day till all symptoms have disappeared. The birds which are being treated should be kept in a dry, sunny, well-ventilated coop and fed plenty of nourishing food.—J. A. K.

Transplanting Blackberries

Can I transplant two-year-old Mammoth blackberry roots and roses at this time of the year without danger of their dying?—Subscriber, East Bakersfield.

It depends on the condition of the plants. If they have been deprived of water long enough to be almost entirely dormant at this time it is possible they might be moved without danger. However, we would prefer to defer the moving for two or three months. At that time they should be entirely dormant, and if reset with an abundance of water to settle the dirt about them they should start with the first warm days, and every plant should give something of a crop next year, though not as much as if left in the present location.

Grape Cuttings

What is the best month to start grape cuttings?—Subscriber, East Bakersfield.

The best month to start grape cuttings is when the vine is entirely dormant. The usual method is to gather the brush at pruning time and work into cuttings 10 or 12 inches long, burying them two-thirds of their length in sandy loam soil, and handling the same as any other nursery stock as to irrigation and cultivation.

Preserving Flowers

Is there any way of sending orange blossoms east so they will retain their form and fragrance? Attempts which I have made so far have proved fail-

(Continued on Page 383)

The Household Department

HALLOWEEN COMES BUT ONCE A YEAR.

Written for California Cultivator by Mrs. J. W. Coolidge, Porterville.

Prize Article.

When the boys and girls of a certain village school appeared one morning in late October, there was a pleasant excitement in the air. Many nods, smiles and "Did you get one?" 's passed among them. Even the teacher seemed interested, for she, too, smiled and nodded when asked the question.

It appeared that quite late the previous evening door bells were rung in many homes. When the doors were opened no person stood there, but small packages lay on the steps. Upon investigation these proved to be walnuts wrapped in yellow tisue paper and tied with red ribbon. Within the nuts were small slips of paper bearing mysterious inscriptions which, when puzzled out, were found simply to be written backward. They ran as follows:

"Halloween comes but once a year
Out at our house you will find good cheer.
Unless the ghosts shall have fastened the gate
Be sure to come at half past eight
—Helen Lane."

Helen herself had nothing to say but "Come and see."

Her home was situated on the extreme edge of the village, and was a large commodious farm house set in pleasant grounds with many trees. When the guests began to arrive that night the whole place was in total darkness, but as they approached the gates leading to the grounds a faint glimmer of light proved to be pumpkin lanterns on each pillar. Just as they reached the gate a tall ghostly figure appeared in the gateway and "Follow the rope" was heard in deep awe-inspiring tones. A few of the more timid ones were inclined to stay outside but were encouraged to take hold of the rope, and keeping their hands on it followed where it led. This was through the grounds from tree to tree, behind bushes, through fences (which they had to climb), and finally to the back door of the house. The kitchen was very dimly lighted with one pumpkin lantern, and another ghost without speaking pointed to the stairs. Upon reaching the second floor the same scene was enacted and they went on to the third floor.

This was a great old-fashioned attic decorated with autumn leaves and lighted by many pumpkin lanterns. There was a tent in one corner with a real witch in it who told the fortunes of all who dared approach. All of the old-fashioned games were played, bobbing for apples, and so on.

One game which caused much merriment deserves description. The boys and girls were lined up facing each other and about six feet apart. They were each given one end of a cord six feet long with a raisin tied in the middle, and directed to put the end in their mouths and chew towards the raisin, the one reaching it first getting the prize.

When games were exhausted refreshments appeared. They consisted of dainty sandwiches, doughnuts, individual pumpkin pies and cider, and were served from tin plates and cups, paper napkins with Halloween decorations being used. Refreshments over, the sounds of a stirring march were heard from below stairs and a grand march was started for the first floor. The boys and girls passed out two by two, and as they reached the stairway each was handed a tiny lighted candle with a shining red apple for a candlestick; tied to the candles were little slips of paper with rhymed lines written on them telling the fortune of the bearer. When they were all downstairs the music changed, and soon to a merry tune they were dancing the Virginia reel which ended the evening's entertainment, and, the ghosts having disappeared, they went home voting this the merriest Halloween.

For older guests it adds greatly to the mystery and fun to invent as many obstacles as possible to the progress through the grounds and it is really thrilling when deep groans are heard in the darkest places.

The ghosts were draped in sheets with tall peaked caps made from stiff white cambric muslin. These were drawn over the head, concealing it entirely, holes being left for the eyes and mouth.

Recipes.

Doughnuts—Three eggs, one cup sweet milk, one even cup sugar, four tablespoons melted butter, about one quart flour sifted with three rounding teaspoons baking powder. Roll as soft as possible and roll all out before frying any. They are even better if left to stand a short time before frying. Then drop into deep hot fat with the upper side down. Fry only a few at a time, drain and roll in granulated sugar and cinnamon mixed. Must be eaten to be appreciated.

Individual Pumpkin Pies—Use any good pastry formula. Cut in rounds with scalloped cooky cutter and press down into muffin tins, thus making little pastry shells. Fill with following mixture and bake nice brown:

Filling—Beat four eggs thoroughly. Add one pint finely mashed pumpkin (I use canned and like it), and beat again, adding about one-half cup sugar, or sweeten to taste; one tablespoon ginger, one tablespoon cinnamon, also little nutmeg. Finally add one pint rich milk or, better still, one pint cream. Beat all well together, fill shells and bake.

OUR HOUSEHOLD

The household contests have brought in some splendid and very helpful material. We want to make this department an exchange for helpful ideas. The contests merely suggest some definite line to bring out communications from our friends, but we want to hear from you on any subject which you find of great interest as a housewife or which you would like to have discussed. If you have a problem, send it in. We will put it before our other Cultivator readers. We can help each other.

Next week some questions received recently will be answered on this page.

November Contest

Many excellent suggestions have been sent in by subscribers for the subject of the November prize contest; all will probably be used later, but the one which seems most timely is that of Mrs. J. W. Coolidge of Porterville. She writes: "By all means let us have for the November contest articles on 'A Safe and Sane Christmas,' one which would eliminate the dreadful strain of the week before."

That is a subject, surely, which is close to all our hearts. We don't want to eliminate Christmas; few of us would eliminate Christmas giving, but would we not all joyfully eliminate the "dreadful strain of the week (or month) before" and the flat feeling of the week after? If we put in more love and thought and substracted social obligation, would that go a long way toward solving the problem?

In reading an exchange recently this sentence caught our fancy:

"When we shall have schooled ourselves to saying to the unexpected guest. 'Roast turkey and cranberry sauce have I none, but sausage and apple pie give I unto thee,' we shall have reached the acme of hospitality."

Is not that also the thought which should actuate Christmas? The giving, not the gift, is the essential without which Christmas is not made ours.

Are you on your way to solve the Christmas problem, or are you sitting back thinking that perhaps this year you will start? Give us your ideas.

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people now enjoy the light of the Aladdin and every mail brings hundreds of enthusiastic letters from satisfied users endorsing it as the most wonderful light they have ever seen. Such comments as "You have solved the problem of rural home lighting"; "I could not think of parting with my Aladdin"; "The grandest thing on earth"; "You could not buy it back at any price"; "Beats any light I have ever seen"; "A blessing to any household"; "It is the acme of perfection"; "Better than I ever dreamed possible"; "Makes my light look like a tallow dip"; etc., etc., pour into our office every day. **Good Housekeeping Institute,** New York, tested and approved the Aladdin.

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to the person who shows us an oil lamp equal to the Aladdin (details of this Reward Offer given in our circular which will be sent you). Would we dare invite such comparison with all other lights if there were any doubt about the superiority of the Aladdin?

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THEODORE PAYNE
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months' subscription to the Cultivator. If your subscription has already been extended in credit for articles, recipes or photos submitted in the household contests, you are eligible as a contestant for cash prizes, but cannot secure further extension of subscription.

Send Articles Early

All articles for contest should be addressed to California Cultivator, Los Angeles, and should be in this office by Thursday, November 12, which is just one week before they will appear in the paper in the issue of November 19.

Many Halloween articles and walnut recipes for this contest came in too late to enter. Several communications dated October 5 were not received until October 12. Perhaps they traveled too long in somebody's pocket. Better give them to Uncle Sam at once. Please write on one side of your paper.

Among suggestions for future contests some excellent ones are: The School Lunch, Planning Meals Ahead, How to Keep the Boys and Girls on the Farm. What do you think of them? What is your suggestion? Write us when you send in your Christmas article or photo for the contest of November 5.

Photo Contest

The next photo contest will close Thursday, October 29. Be sure to get your photo of farm life in early.

Two dollars will be paid for the first prize-winner, one dollar for the second, and then for all photos which are accepted and retained a six months' subscription to the California Cultivator will be given. We will only keep photos from which we can make clean-cut engravings. This means that everyone who sends a photograph which will answer for an engraving will receive a prize, except that only one extension of subscription will be made in credit for photo retained.

FAVORITE WAYS OF USING WALNUTS.

Prize Recipe.

Nut Loaf.

Chop together one and one-half cups nuts, one stalk celery, two tablespoons parsley, one small onion. Add one cup cooked rice, two cups bread crumbs, one tablespoon olive oil or butter, one tablespoon flour, add one and one-half cups hot milk, and two eggs (yolks and whites beaten separately), salt and pepper to taste. Bake three-quarters of an hour. Serve hot with Hollandaise or tomato sauce.

Tomato Sauce—1 tablespoon butter, 1 tablespoon flour. Put over the fire until well blended. Add 1 cup strained tomato. Cook until it thickens. Salt to taste; add a pinch of cayenne if liked.—Mrs. C. G. Warren, Riverside.

Walnut Loaf.

Two cups milk, ⅔ cup flour, ½ teaspoon salt, 2 cups bread or cracker crumbs, 1½ cups chopped walnuts, 2 beaten eggs, ½ teaspoon grated onion. Stir the flour smooth with part of the milk. Heat the rest of the milk to boiling, and stir into it the flour mixture. Cook until thick. Add to this the remaining ingredients, put into an oiled bread pan and bake one-half hour. Serve with gravy or plain.—Mrs. R. G. Lantz, Salida.

Nut Sausage.

One and one-half cups cooked rice, 1 cup ground nuts, ½ teaspoon ground sage, 1 teaspoon (scant) salt. Mix well, form in small cakes and fry as you would meat sausage.—Mrs. L. C. Buhl, Pomona.

Nut Salad.

One cup of well-flavored apples cut in small cubes, one cup celery chopped fine, one cup walnuts chopped. This is the well known Waldorf salad, but when used with the following cream dressing is especially delicious and always much appreciated by the masculine members of the family:

Cream Salad Dressing—Two eggs, one cup cream, 2 tablespoons sugar, 2 tablespoons butter, ½ cup good vinegar, not too sour. Beat the eggs thoroughly, then beat in the cream. Put in double boiler over boiling water, add sugar and butter, and while stirring constantly pour in the vinegar very slowly. Take off the instant it becomes creamy and season to taste with salt and a liberal dash of paprika. This is very good with any fruit salad. —Mrs. J. W. Coolidge, Porterville.

Toasted Walnuts.

You need not wait until you have some ingredient which you are out of to try this. Put walnut meats, as whole as possible, on a large pie plate and set in moderately hot oven. Stir occasionally to keep from burning; leave about 15 minutes, and you have a crisp, slightly browned nut with a delicious flavor. Sprinkle with salt and put away in fruit jars until used. They remain crisp and are always ready to serve.—Mrs. G. H. P., Los Angeles.

Baked Apples With Walnuts.

Remove cores of apples and sprinkle in sugar, add just a little water so they will not burn, and bake until soft. When cold sprinkle fine chopped nut meats over the top.—P. S. R.

Grapes With Nuts.

Six pounds Muscat grapes, four pounds white sugar, two pounds walnut meats. Seed grapes, cook with sugar until thick. Add nuts (first run through the grinder), and seal in glasses. You will wonder why you did not have it before.—Mrs. Charles R. Austin, San Fernando.

Delicious Walnut Conserve.

Peel ripe figs and mash the pulp. To each pound of pulp add one pound of sugar and cook to a thick jam. This is a slow process and should be done over a slow fire, and the jam must be constantly watched and stirred, for the slightest scorching will spoil the flavor. Prepare English walnuts by shelling, and chopping up the meats to a medium fineness. Do not put them through a meat chopper as that will make them too fine and oily. A cupful of chopped meats to two quarts of cooked jam will make a good proportion, but one can have as many nuts to the jam as liked. When the jam is cooked add the nuts and stir them thoroughly in the hot jam, but do not cook them. After stirring in the nuts fill jam glasess with the conserve, and when cold, cover with paraffine and set away in a cool place. This is one of the most delicious conserves imaginable, and when served with whipped cream can not be equalled for delicacy.—Georgina S. Townsend, Azusa.

Carrot Pudding.

Mix 1 cup grated carrots (raw), 1 cup grated potatoes (raw), 1 cup brown sugar, 1½ cups flour, 1 cup raisins, 1 cup currants, 1 cup chopped suet, 1 teaspoon soda, 1 teaspoon cinnamon, ¼ teaspoon cloves, one cup walnut meats. Steam 3 hours. Serve with hard sauce.—Rebecca Strutton, San Diego.

Tomato Mince Meat With Nuts.

One peck green tomatoes cut or chopped fine, five pounds granulated sugar, one and one-half pounds raisins, one tablespoon each of cinnamon and cloves, one tablespoon salt, or more if desired; one cup good vinegar. Cook until thick, then add two or three cups of chopped walnuts. This can be canned and will keep a long time. It is a fine substitute for mince meat, and is much cheaper.—G. M. H., Long Beach.

Nutty Pumpkin Pies.

Prepare the usual pumpkin filling for your pies, but before putting into the crust add a cup of walnut meats. When the pie is baked sprinkle the top with fine nut meats. This makes a very pleasing variation from the ordinary pie.—H. W. Shepard, National City.

Walnut Raisin Pie.

When making raisin pie use a few walnut meats and see what a delicious raisin pie results. Delicious mince meat pies are obtained by using less meat and substituting walnuts, and many prefer them to those made with meat alone.—Mrs. P. Gilli, Bakersfield.

Walnut Bread.

Two cups whole wheat flour, 1 cup white flour, ⅓ cup sugar, 1 teaspoon

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salt, ½ teaspoon each of cinnamon and cloves; ¼ teaspoon ginger, 1 teaspoon baking powder, ½ teaspoon soda, 2 tablespoons shortening, 2 tablespoons molasses, 1½ cups milk, 1 cup each of seedless raisins and broken walnut meats. Bake about 40 minutes. Do not cut till cold. Spices and raisins can be left out if desired and it is very good.—Mrs. J. F. Crawford, Hemet.

Nut Bread.

Four cups whole wheat flour, 4 teaspoons baking powder, 1 cup chopped walnuts, 1 teaspoon salt, ½ cup sugar, 1 egg, 2 cups milk. Let rise 20 minutes before baking. Bake one hour.—Mrs. S. G. Unland, Aanaheim.

Walnut Bread.

One egg, ½ cup sugar, 1 cup milk, 3 cups flour, 3 teaspoons baking powder, 1 cup chopped walnuts, pinch of salt.—Mrs. A. M. Larson, Kingsburg.

German Nut Loaf.

One cup chopped walnuts, 1 cup chopped seeded raisins. 4 cups flour, ½ cup sugar, 2 cups milk, 1 egg. 1 teaspoon salt, 4 teaspoons baking powder. Sift together flour, salt, sugar and baking powder, add nuts and raisins, well beaten egg; then the milk. Mix well, put in greased pans, and let stand 20 minutes. Bake in moderate oven 55 minutes. Cut thin and buttered it makes excellent sandwiches for the children's lunch box.—Mrs. G. A. Brunson, Artesia.

Walnut Molasses Loaf.

One and one-half cups coarsely chopped walnut meats, 2 cups Graham flour, 1½ cups white flour, 1 cup New Orleans molasses, 1 cup white sugar, 2 cups sweet milk, 1 egg, 1 large teaspoon soda, 1 small teaspoon salt. Place beaten egg, molasses, sugar and milk in mixing bowl. Mix together Graham flour, white flour, walnut meats, soda and salt. Now mix these with ingredients already in bowl and beat well for five minutes. Turn into well-greased loaf pan and bake in slow oven about one hour. This makes a pan eight by twelve inches level full. —Mrs. Burle Jones, Maxwell.

Walnut Bread.

Four cups of flour, 4 teaspoons baking powder, ½ cup of sugar, small teaspoon salt, 1 egg, 1 cup walnuts, (chopped or ground), 1½ cups sweet milk. After mixing, put in pan and let stand 30 minutes. Place in a moderate oven and bake 45 minutes.—Mrs. J. R. Beck, El Monte.

Walnut Spice Cake.

One and one-half cups sugar, 1½ cups butter, 2 eggs, 1 cup sour milk or buttermilk, ½ cup sweet milk, 1 teaspoon baking soda, 2 cups flour, 1 teaspoon cloves, 2 teaspoons cinnamon, ¼ teaspoon nutmeg, 1 large cup chopped walnuts, ½ cup seeded raisins. Bake as a loaf cake and cover with white frosting.—Mrs. N. C. Johnson, Chatsworth.

Nut Cake.

Three eggs, 1½ cups granulated sugar, 1 cup sour cream, 1 cup raisins, 1 cup English walnut meats, 2½ cups flour, 1 teaspoon soda, ½ teaspoon each cinnamon, cloves and nutmeg. Separate the yolks and whites of the eggs. Beat yolks until creamy with sugar and cream. Add spices. Sift together flour and soda. Dust fruit with some flour, add to the mixture and beat thoroughly. Lastly, fold in gently the stiffly beaten whites of the eggs. Bake in a dripping pan, ice when cold and place half of a walnut meat in the center of each square, when cut in square pieces.—Mrs. Alice Munro, Klink.

Fruit Cake.

One cup butter, 1½ cups sugar, 3 eggs, 1 cup sour milk or quite thick buttermilk, 1 teaspoon soda, 1 cup raisins, 1 cup English walnuts, 2½ cups flour, 1 teaspoon of cinnamon and nutmeg, ½ teaspoon cloves, flavor with a little lemon extract. Cream the butter and sugar, then put in yolks which have been beaten, then raisins and coarsely ground walnuts. Add sour milk (put soda in cup first then fill up with the milk), stir and add to above mixture, now add flour and spices, and lastly the whites of the eggs beaten to a stiff froth. This makes three large layers.—Emilie Dettweiler, Alta Loma.

Potato Cake.

One cup of butter, 2 cups of sugar, 1 cup of walnuts, 1 cup of potatoes, 1 cup of chocolate, 1 cup of sweet milk, 2 cups of flour, 1 teaspoon of baking powder, 1 teaspoon each of cloves and cinnamon, 4 eggs, beaten separately. This makes a splendid loaf cake.—Cora Smith, Tulare.

Potato Cake.

Cream 2 cups sugar with 1 cup butter. Into 1 cup of hot mashed potatoes stir ½ cup shaved bitter chocolate, 1 cup walnut meats, cut fine; 1 teaspoon allspice, 1 teaspoon cinnamon, ½ teaspoon cloves. Beat 4 eggs separately, add whites to creamed butter and sugar, yolks to other mixture, 2 cups flour, 2 teaspoons baking powder, 1 cup milk, combine mixtures, adding flour and milk alternately. Flavor with 1 teaspoon vanilla. Beat thoroughly and bake in a loaf 45 minutes. Frost and put nice halves of walnuts on top.—Mrs. J. F. Browning, Highland.

Nut Filling for Cake.

One cup white sugar, 1 cup sour cream, 1 cup chopped English walnuts. Bring ingredients to the boiling point, and leave over a slow fire to simmer until it thickens. Remove from fire and add 1 teaspoon of vanilla, beat until creamy and spread on cake.—Mrs. C. E. Peterson, Bard.

Mocha Walnut Filling.

Cream two cups of powdered sugar and two tablespoons butter. Incorporate 1 cup of walnut meats, chopped fine, and moisten with cold coffee until convenient consistency to spread quickly. This filling cuts without crumbling or breaking.—Mrs. T. P. Harrell, Los Angeles.

Russian Rocks

Three cups flour, 1 pound walnuts (1 pint kernels), 1 cup seeded raisins. Mix together. One and a half cups sugar, 1 teaspoon cinnamon, 1 teaspoon nutmeg, ½ teaspoon cloves, a pinch salt, 1 cup melted butter, 3 eggs well beaten, 3 teaspoons strong vinegar, 1 teaspoon soda disolved in a little hot water. Mix as given. Drop from spoon in baking pans, bake in moderate oven.—Martha Walsh, Bostonia.

Ozark Rocks

One cup butter, 1½ cups light brown sugar, 1 cup coarsely chopped English walnuts, 1 cup raisins, 1 cup sour milk, 3 eggs, 3 cups flour, 1 teaspoon each of cloves, cinnamon and soda. Beat eggs, sugar and butter together, add milk with soda stirred into it, then spices, nuts and floured raisins, ading the flour at intervals. Have pans greased. Drop mixture from a teaspoon into pans, some distance apart, Bake like cookies.—Mrs. H. P. Dralle, Sanger.

Nut Drops

Beat yolks of two eggs until thick, add gradually while beating one cup brown sugar pressed hard into cup, 1 cup chopped walnuts, the stiffly beaten whites of two eggs, 6 heaping tablespoons of flour and one scant teaspoon of baking powder. Drop on buttered tin and bake in a moderate over.—Myrtle E. Fishback, Woodland.

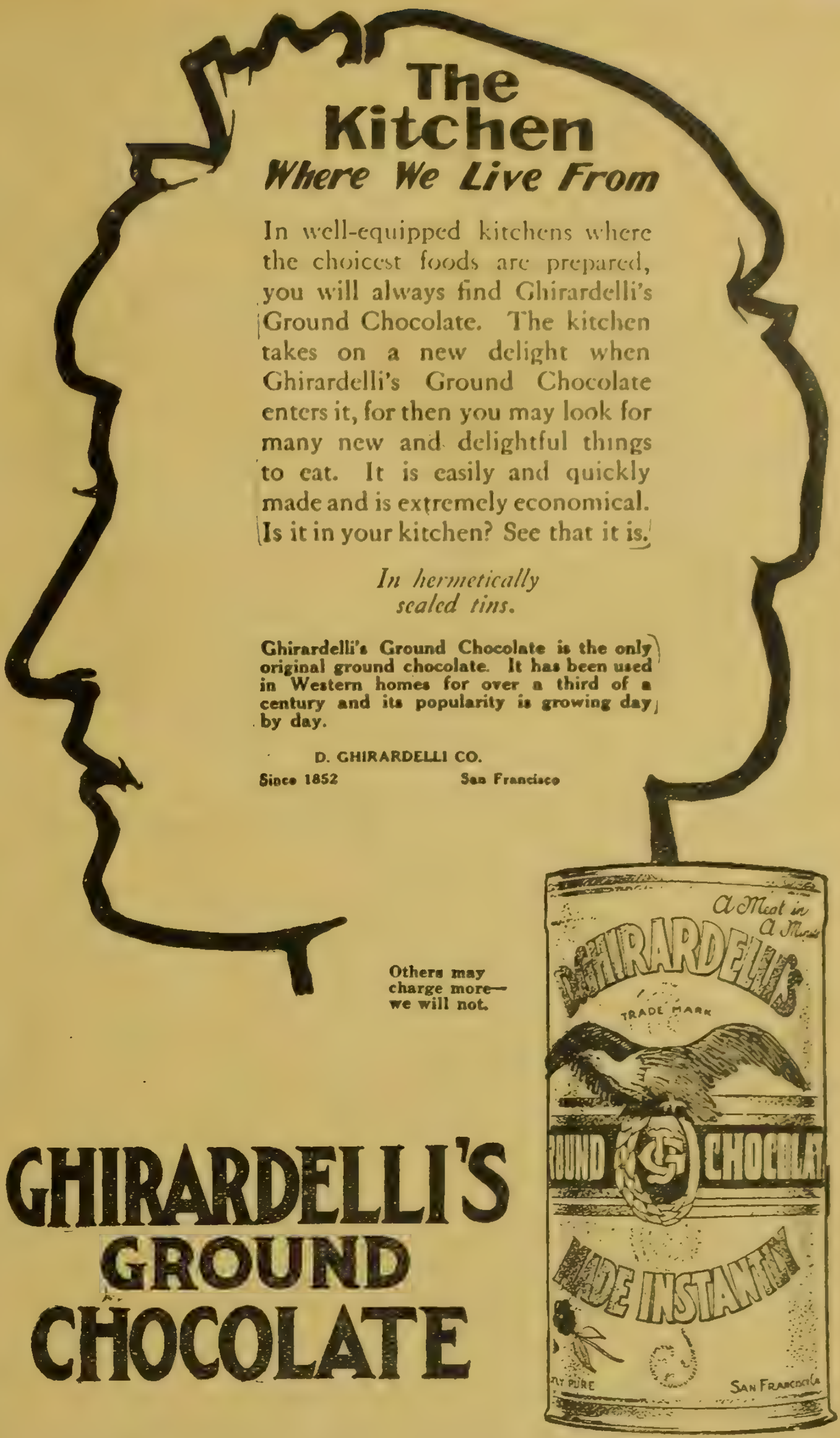
Walnut Jumbles

Three-quarters of a cup of chopped nut meats, ½ cup of butter, 1 cup sugar, 1 egg, pinch of salt, 1 teaspoon of baking powder, 2 cups of flour, ⅓ cup of milk. Cream the butter and sugar together, add the egg well beaten, the milk, salt, flour, baking powder and nuts. Mix well and drop in spoonfuls on buttered tins. Bake in a quick oven. One-half cup chopped raisins may be added.—Mrs. F. A. Rollins, Chino.

Walnut Cookies

Half cup lard, ½ cup butter and 2 cups white sugar. Cream together. Beat 2 eggs and add ten tablespoons

(Continued on Page 383)



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San Francisco-Los Angeles Produce Markets

Los Angeles Market

LOS ANGELES, Oct. 14, 1914.

The prices given below, except where otherwise noted, are those made by wholesale or commission houses to retailers, and are intended to give producers the range of the market rather than an indication of prices which they will secure. Jobbers' quotations to producers are not given.

BUTTER

Butter is steady. Receipts, about 75,000 pounds daily.

Prices to trade 4 cents above following quotations:

Creamery Extras	.31
Firsts (jobbing price)	.29@30
Country	.24
Ladle	.23

CHEESE

Prices to trade 1 and 2 cents higher:

California Fresh	.13@13½
Domestic Swiss	.22@24
Imported Swiss	.36@38
Eastern Daisy	.18½@19
Longhorn	.19
Oregon Triplets	.18@18½

EGGS AND POULTRY

Eggs is eggs. A 15-cent advance has been made this week, and candled stock is readily commanding 59 cents. Case counts are held up to 55. The extreme shortage cannot long obtain and it is not expected such prices will be maintained. Ten cents of the advance was made on Tuesday.

Prices to trade 3 cents higher than following quotations:

Fresh ranch, case counts	.55
Candled	.58@59
Northern Case Count	.48
Petaluma-Santa Rosa	.50

Prices to producers:

Hens, lb.	.13@19
Roosters, old	.9
Broilers, lb.	.21
Fryers	.16
Roasters, lb.	.15
Turkeys	.16@22
Ducks	.16
Geese	.14
Squabs, doz.	2.00

LIVE STOCK

The following quotations are f. o. b. Los Angeles on all stock:

Hogs, 175 to 200 lbs., per cwt.	8.50
Prime Steers	7¼@7½
Heifers	6¼@6½
Calves, lb.	8½@9
Sheep—	
Ewes, head	4.50
Wethers	4.50@5.00
Lambs, head	4.50@4.75

POTATOES

Wholesale selling price:

Idaho	1.30@1.35
Sweets, lug	.55@65
Northern Burbanks, cwt.	1.25@1.35
Salinas	1.90@2.00
Shimas	1.40@1.50
Lompocs	1.90@2.00

ONIONS

Wholesale selling price:

Australian Brown, cwt.	.90@1.00
Silverskins, cwt.	2.00@2.25
Yellow Danvers	.90@1.00
Garlic	.13@15

VEGETABLES

Wholesale selling price:

Artichokes, Northern, doz.	.40@60
Beets, doz.	.30@35
Beans, String	.6@7
Lima	.5@6
Cabbage	.70@80
Carrots, doz.	.30@35
Cauliflower, doz.	.60@70
Celery, doz.	.50@60
Corn, Sugar, box	.65@75
Cucumbers, lug	.35@45
Pickling, lug	1.20@1.35
Egg Plant	3½@4
Escarole, doz.	.40
Horseradish, lb.	.13@15
Leeks, doz.	.35@40
Lettuce, crate	.95@1.15
Mint, doz.	.35@40
Okra, lb.	.7@8
Onions, Green, doz. bunches	.15@20
Oyster Plant	.30@35
Parsnips, doz.	.30@35
Peas, lb.	.3@7
Peppers—	
Bell, lb.	.3@4
Chili, lb.	.2@4
Pumpkins, lb.	.2@3
Radish, doz.	.20@30
Rhubarb, box	.90@1.00
Spinach, doz.	.20
Squash—	
Summer, lug	.30@35
Crookneck	.30@40
Hubbard, lb.	1½@2
Turnips	.30@40
Tomatoes, lug	.40@50

FRESH FRUIT

Wholesale selling price:

Apples—	
Banana Apples	1.00@1.15
Bellflowers	.70@90
Jonathans	1.25@1.35
Spitzenburgs	.65@90
King Davids	1.25@1.35
Crabapples	1.00@1.10
Bananas	3½@4
Berries—	
Strawberries, basket	.6@10
Blackberries, basket	.6@7
Cantaloupes—	
Locals, large	1.20@1.30
Casabas, doz.	.85@1.00
Cranberries, bbl.	7.50@8.25
Figs, 1-layer box	.90@1.00
Grapes—	
Black Moroccos	.65@1.00
Cornichon	.90@1.00
Concord	1.25@1.35
Malagas, crate	.75@90
Muscatels, lug	.75@85
Tokays, lug	.80@90
Guavas, basket	.3@4
Peaches, lug	.90@1.10
Pears, Bartlett, lug	1.20@1.25
Seckel, lug	1.00@1.25
Persimmons, lb.	.5@7
Pineapples, lb.	.6@6½
Plums, lug	1.25@1.40
Pomegranates, box	1.25
Quinces	.50@65
Roselle, crate	.80@90
Watermelons, lb.	.1@1½

CITRUS FRUIT

Wholesale selling price:

Lemons	2.00@3.50
Grapefruit, Seedless	2.25@2.75
Valencias	1.75@2.75
Limes, basket	1.50

DRIED FRUITS

Wholesale prices to retailers are:

Evaporated Apples, Fancy., lb. boxes	.6½@12½
Apricots	.9@11
Nectarines	.12½
Peaches	.6@9½
Pears	.8@12
Prunes	.5¾@11
Plums	.10

NUTS

Prices named by California Walnut Growers' Association are:

No. 1	.16½
Budded Walnuts	.20
Jumbos	.19
No. 2	.12
Culls	.9

Prices fixed by California Almond Growers' Exchange, f. o. b. California.

Almonds—	
Nonpareil	.21
I X L	.20
N P U	.19
Drake's Thinshell	.15
Pecans	.17
Peanuts—	
California, Raw	.6
Japan	.7½
Eastern	.7½
Rice Corn	5.00@5.25

HONEY

Wholesale selling price:

Comb, Fancy, Water White	.15
White	.13
Light Amber	.12
Extr. Water White	.8
White	.7½
Light Amber	.6½
Beeswax	.32

BEANS

Wholesale selling price:

Producer's price not far from one dollar under these quotations:

Limas	5.60@5.75
Lady Washington	5.00@5.10
Black Eyes	6.50@7.50
Pinks	4.25@4.50
Lentils	7.50@9.00
Small White	5.75@6.25
Garbanzos	7.50

RICE

Wholesale selling price:

California	5.00
Broken	3.50@3.75

HAY

Buying prices f. o. b. cars Los Angeles:

Barley	10.00@11.00
Wheat Hay	10.00@11.00
Tame Oat	11.00@13.00
Alfalfa	9.00@11.00

GRAIN

Wholesale selling prices f. o. b. Los Angeles:

Corn, Yellow	2.20
Corn, White	2.30
Wheat	2.00
Oats, Red	2.35
Oats, White	1.65
Kaffir Corn	1.90
Millet	3.75
Popcorn	4.75@5.00
Egyptian Corn	2.30
Barley Seed	1.45
Milo Maize	2.00
Cal. Seed Oats	2.25
Sunflower Seed	5.25@5.35

FEED STUFF

Wholesale selling prices f. o. b. Los Angeles:

Bran, Heavy	1.75
Alfalfa Meal	1.05
Alfalfa Syrup, per cwt.	1.05
Beef Scraps	3.00@3.10
Beet Pulp	1.25
Cracked Corn, cwt.	2.20
Cracked Wheat, cwt.	2.15
Cotton Seed Meal	1.85
Bloodmeal	3.60@3.70
Bone Meal	2.00@2.10
Bone Green	1.95@2.05
Charcoal	1.90@2.00
Oil Cake Meal	2.05
Fish Meal	3.15@3.25
Rolled Oats	1.70
Rolled Barley	1.30
Middlings	2.00
Oat and Wheat Middlings	1.55

San Francisco Market

SAN FRANCISCO, Oct. 13, 1914.

The prices given below, except where otherwise noted, are those made by wholesale or commission houses to retailers, and are intended to give producers the range of the market rather than an indication of prices which they will secure. Jobbers' quotations to producers are not given.

BUTTER

Butter market is normal with little of interest.

Prices to trade 4 cents above following quotations:

Fancy Creamery	.29½
Seconds	.27½

CHEESE

Wholesaler to retailer.

Oregon Y. Am.	.13@15
California Flats	.10@12½
Cheddar	.20
Oregon Twins	.16

EGGS AND POULTRY

Egg market is firm with quotations slightly under those of last week.

Prices to trade 3 cents higher than following quotations:

Fancy Ranch	.35½
Storage Extras	.30

Price to producer:

Hens	.15@18
Fryers	.20@21
Roosters, old	.12
Roosters, young	.20@22
Broilers	.19@21
Belgian Hares, lb.	.10@11

LIVE STOCK

San Francisco prices, gross weight:

Steers	.4@6¾
Cows and Heifers	.3@6¼
Calves, lb., live weight	.6@9½
Hogs	.9@10¼
Wethers	.5@5½
Ewes	.4½@5
Milk Lambs	.6½@6¾

POTATOES

Wholesale selling price:

Alvarado	1.25@1.40
Delta, Burbanks	.80@1.00
Salinas Burbanks	1.70@1.90
Sweets, cwt.	1.40@1.60

ONIONS

Wholesale selling price:

Yellow, sack	.35@40
Garlic, new	.10@12½

VEGETABLES

Wholesale selling price:

Beans—	
Strings	.1½@3
Limas, lb.	.2@2½
Brussels Sprouts	.3@4
Cabbage, cwt.	1.00@1.25
Carrots, sack	.35@50
Celery, doz.	.15@30
Corn, Green, sack	1.00@1.75
Cucumbers, lug	.25@40
Egg Plant, lug	.25@50
Peppers—	
Bell, lug	.30@40
Chili, crate	.45@60
Rhubarb, box	.60@1.00
Tomatoes, lug	.25@30

FRESH FRUIT

Wholesale selling price:

Apples—	
Bellflowers	.40@65
Crabapples	.25@50
Newtown Pippins	.50@90
Bananas, Hawaiian, bunch	1.25@1.75
Cantaloupes, crate	.40@1.50
Casabas	.50@75
Cranberries, bbl.	7.50
Figs—	
Black, double layer	.40@60
White, box, single layer	.25@40
Grapes—Crates	
Black	.25@40
Tokay	.40@60
Seedless	.40@50
Malagas	.35@50
Muscats	.50@60
Huckleberries, lb.	.8@10
Nectarines, crate	.75@1.00
Peaches, lugs	.30@65
Pears—	
Bartletts, wrapped	1.25@2.00
Bartletts, lugs	.50@75
Winter Nelis, wrapped, box	1.00@1.25
Other varieties	.35@75
Plums, crate or lug	.75@1.25
Pomegranites	.50@1.25
Pineapples	1.50@2.00
Persimmons	.50@1.00
Prunes, crate	.60@1.00
Quinces, box	.75@1.00
Raspberries, chest	4.00@6.00
Strawberries, chest	2.50@4.00
Watermelons, doz.	.75@2.00

CITRUS FRUIT

Wholesale selling price:

Grapefruit, Seedless	1.00@2.50
Lemons	2.00@4.25
Lemonettes	5.00@6.50
Valencias	1.25@2.25

DRIED FRUITS

Wholesale prices are:

Prunes—1914 crop, bulk basis, 30-40s, 6½c@6¾c; 40-50s, 6@6¼c; 50-60s, 5½@5¾c; 60-70s, 5½@5¾c; 70-80s, 5¼@5½c; 80-90s, 5¼@5½c; 90-100s, 5¼@5½c. 1913 crop worth practically same prices. The above are for Santa Clara Prunes, outside sections about ¼c.

Other Fruits 50-lb. boxes—	Standard.	Ch.	Extra Ch.	Fcy.
Evaporated Apples	5¾c	6 c	7	
Apricots	6½c	7½c	8 c	8¾c
Peaches	3½c	4 c	4¼c	5
Pears	7 c	8 c	9 c	10

RAISINS

RAISINS—The following prices are f. o. b. Fresno, as given out by the Associated Raisin Company for September shipment, and with the exception of bulk seeded and ungraded Muscatels are guaranteed against a decline to December 31st: Fancy seeded, 16-oz., 6½c; 12-oz., 5½c; bulk, 6c; choice seeded, 16-oz., 6⅛c; 12-oz., 5c; bulk, 5½c loose Muscatels, 2-crown, 5c; 3-crown 5¼c; 4-crown, 5¼c; ungraded, 5c; 1914 crop—Thompson Seedless, No. 1, pkgs. 7⅜c; 12-oz., 6c; 50-lb. cs., 6¼c; Sultanas, 50-lb. cs., 5½c; bulk, layers, 50-lb. bxs., $2.75; in 20-lb. bxs. 6-crown. $2.75; 5-crown, $2.25; 4-crown, $1.60; 3-crown, $1.30; 5-lb. bxs. on all bulk stock, 50c additional; 10-lb. bxs., 25c additional. Car tons—Clusters, 20 to a case, No. 1, $1.70; No. 2, $2.10; No. 5, 4 to a case, $2.25. Local representatives of the association are asking about ¼c higher, while several of the larger packers are quoting ½c under these figures.

NUTS

ALMONDS—Prices fixed by Almond Growers' Exchange to the trade, f. o. b. California:

Nonpareil	.21
I X L	.20
Ne Plus Ultra	.19
Drakes	.16

Wholesale selling price:

Peanuts—	
Unpolished	.5@
Polished	.6@6½
Japanese, Shelled	.6¼@6¾
Italian Chestnuts	.6½@7

BEANS

Wholesale selling price:

Limas	5.35@5.50
Lady Washington	3.60@3.75
Pink	3.25@3.50
Black Eyes	3.25@3.50
Cranberry	4.00@4.25
Small White	4.75@5.00
Garbanzos	6.00@6.25
Large White	3.50@3.75
Bayou	5.00@5.50
Manchurian Speckled Bayous	3.75@4.00
Manchurian Butters	4.40@4.60
Manchurian Cranberry	4.00@4.25
Red Mexican	5.25
Red Kidney	3.25@4.75
Horse Beans	2.50@3.25
Bayou, Mexican	3.75@4.00

HONEY

Comb, Water White	.14@16
Amber	.10@12
Dark	.7@10
Extracted White	.7@9
Light Amber	.6½
Dark	.4@5½
Beeswax	.27@32

HOPS

1914

Sacramento Valley	.16½@17½
Sonoma-Mendocino	.18@20
Oregon Clusters	.11

HAY

Under date of October 10 Scott,

WEATHER CONDITIONS

For week ending Oct. 10, 1914.

Report from the various stations of the U. S. Weather Bureau, by Geo. H. Wilson, director, San Francisco:

	Rainfall Data			Temperature Data	
	Past Week.	Seasonal to Date.	Normal to Date.	Maximum.	Minimum.
Eureka	.82	2.56	2.16	68	44
Red Bluff	.52	.52	1.24	80	52
Sacramento	.08	.08	.63	82	50
San Francisco	.01	.03	.55	74	52
San Jose	.00	.00	.59	80	42
Fresno	.00	.20	.53	82	48
Independence	.00	.20	.49	74	40
San Luis Obispo	.00	T	.69	76	44
Los Angeles	.00	.19	.18	76	56
San Diego	.00	.68	.18	72	56

T means trace.

Magner & Miller say:

Receipts of hay for the past week, 4151 tons, about the same as for the preceding two or three weeks.

Although the trade has expected to see a decrease in the receipts before this time, they still continue to be very heavy. It is to be expected that receipts will decrease very shortly.

Most of the arrivals continue to be of the poorer and medium grades. The few cars of choice that have arrived have moved without trouble. Some hay has moved for export during the week, although this demand has not been heavy. Arrivals of alfalfa from the river districts are quite heavy but have been cared for fairly well. Straw is without change.

We quote the average wholesale prices on carload lots on today's market as follows:

Fancy Wheat Hay, lt. bales	11.00@12.00
No. 1 Wheat or Wheat and Oat	8.00@9.00
No. 2 Wheat or Wheat and Oat	6.00@7.50
Choice Tame Oat	10.00@11.00
Other Tame Oat	6.00@9.00
Barley	5.00@7.50
Wild Oat	5.00@7.00
Alfalfa	[illegible]
Stock Hay	4.50@5.00
Straw	30@45

GRAIN

Wheat, Cal. Club	1.70@1.72½
Corn, Eastern Yellow, blk.	1.82¼@1.83¾
Barley, Feed	1.07½@1.10
Oats, White	1.45@1.47½
Oats, Red	1.30@1.45
Millet	3@3½
Flax	5@6
Rye	1.50@1.60
Sunflower	5@5½

FEED STUFF

Alfalfa Meal, car lots	11.50@12.50
Bran, ton	30.00@30.50
Feed Cornmeal, ton	43.00
Cracked Corn	43.00
Rolled Barley, ton	25.00@26.00
Rolled Oats, ton	37.00@37.50
Middlings	30.50@31.50
Shorts	31.00@31.50
Oilcake Meal	32.00@33.50
Cocoanut Oilcake Meal	23.00@24.00

Citrus Fruit Market

LOS ANGELES, October 14, 1914.

The orange year is closing with a most satisfactory situation. There are no exceptionally long prices being paid for Valencias, but the excellence of the fruit is forcing the market to recognize it and fairly good returns are received for all shipments of good fruit. A period of five weeks shows an advance on good Valencias in the neighborhood of 40 cents. There are yet about 1200 cars to go, and while they will not all be cleaned up before November 1, which is the beginning of the new year, there is a market in sight for all which will be shipped. Before they are all gone the new crop from central California will begin going forward. Tulare reports ripening rather in advance of usual, possibly as much as two weeks, and by the 10th of November new fruit will be loaded.

Fancy lemons are commanding a strong advance over second grades in the New York markets. In addition another difference of perhaps a dollar is made in favor of desirable sizes, that is, 300's will command perhaps a dollar more than 360's. California lemon growers who desire greater returns must recognize this prejudice and grow more 300's and more fancy grades.

Shipments.

Shipments of oranges to date since November 1, 1913: 37,957 cars; lemons, 2,816; total, 40,773. To same date last season, oranges: 13,381 cars; lemons, 2,170; total, 15,551. Total all citrus fruits two years ago this date, 35,246.

ST. LOUIS, Oct. 12.—Cool, raining. Market steady. Two cars Valencias sold.

VALENCIAS—	Avge.
Spanish Girl, A. H., Arl.	$2.25
Cardinal, Or., Orange	2.85
S.S. Brand, Or., Orange	2.50

CINCINNATI, Oct. 12—Cool. Two cars sold. Market steady.

VALENCIAS—	Avge.
Begonia, S. A. Lordsburg	$2.30
Greyhound, S. A. N. Pomo..na	2.55

PITTSBURG, Oct. 12.—Three cars oranges, one car lemons sold. Weather favorable.

VALENCIAS—	Avge.
Hesperides, S. D. Ex.	$2.30
Iva, S. D. Ex.	2.45
Squirrel, A. H. Arlington	2.75
Prarie Chicken, A. H. Arlington	2.65
Cupid, F. C. Fillmore	2.95

LEMONS—	Avge.
Las Fuentes, Crocker-Sperry Co.	$3.05
Montecito	2.90
Airship, F. C. Fillmore	3.75

CLEVELAND, Oct. 12.—Three cars sold. Market very strong. Cool.

VALENCIAS—	Avge.
Golden Rule, Riv. Ex.	$3.15
Golden Rule, Riv. Ex.	2.65
Crystal, Riv. Ex.	2.30
Yankee Doodle, A. F. High	2.55
Colombo, S. T. Placentia	2.65
Las Palmas, S. T. Placentia	2.15
LEMONS—	
Airship, F. C. Fillmore	$3.50
Cycle,	2.65

CHICAGO, Oct. 12.—Apples, per barrel, 1.50@4.00; boxes, western stock, 80@1.50; crabapples, bushel baskets, 1.25@1.50. Grapes, baskets, 8 pounds, 16@16½; per ton, 25.00@30.00. Grapefruit, boxes, 2.25@4.00. Lemons, boxes, 2.00@5.00. Oranges, boxes, 2.75@3.25. Peaches, cases, six baskets, 1.25@1.50; baskets, one bushel, 50@1.00. Pears, barrel, 1.00@4.00; baskets, one bushel, 40@1.25; per 100 pounds, 60@90. Persimmons, cases, 12 pints, 30@65. Quinces, barrel, 2.00@4.00. Plums, cases, 4 baskets, 65@1.00.

QUESTIONS AND ANSWERS

(Continued from Page 378)

ures. I often read of weddings in the east where the bride wore orange blossoms, and would like to know how they are obtained.—Subscriber, San Dimas.

The form and general appearance can be retained by dipping the flowers in melted paraffine, just warm enough to maintain its fluid condition. Use freshly cut flowers, free from moisture, moving about in the melted paraffine for an instant so as to get rid of all air bubbles. Of course this will not preserve the fragrance, but we think it is the only way to prepare flowers to ship long distances. We also give another formula, although we cannot vouch for its success. Five hundred parts ether, 20 parts transparent copal and 20 parts sand. The flowers are immersed in the varnish about two minutes, then allowed to dry off ten minutes, repeating this five or six times.

Maintaining Pests

Is there any law requiring one to clean up Johnson grass or similar pests and what procedure is necessary?—Subscriber, Tulare County.

There is a state law which gives entire control of this question into the hands of the county horticultural commissioner. In this particular case the inquirer can refer the matter to County Horticultural Commissioner Charles F. Collins at Visalia, and we doubt not his power will enable him to bring it under control.

Watermelons for Horses.

How much feed value have watermelons for horses or hogs? Are they a desirable feed?—Subscriber, Sacramento.

The feed value of melons is exceedingly low. We do not find, however, an analysis which gives the exact value, but it is somewhat lower than pumpkins and pumpkins contain only about one per cent crude protein and practically no fat formers or, to be more exact, .2 of one per cent. The principal value of such a feed lies in its succulency, conditioning and giving horses an appetite for dryer feeds of greater value. Of course, care should be exercised not to feed too heavily because an oversupply of such feed is liable to cause undue activity of the kidneys.

Fertilizer.

I would like to be informed as to best fertilizer for soil in this portion of Los Angeles County. It is a sandy loam. Peach trees are not looking as well as they should and fail to make thrifty growth. Is commercial fertilizer of more value than barnyard manure?—Subscriber, Lankershim.

The question of fertilizing is a long one. On general principles would say that stable manure, if it can be had at a reasonable price, is to be preferred. It has desirable physical action as well as chemical content, which, however, is not as complete a fertilizer as the tree needs, but it can be supplemented with phosphates and potash. The rich loam soils of the Lankershim section should not require very heavy fertilizing if it is receiving thorough cultivation. It is possible the peach trees referred to are affected by some disease like root knot, little leaf, curl leaf or one of the numberless troubles to which the peach is heir. The best answer to such a question can only be given after a visit to the orchard by a qualified tree doctor.

Fleas on Dog.

What is the best remedy for fleas on dog?—Subscriber.

The best remedy for fleas on a dog is one of the many makes of tar soap sold by any druggist. Bathe the dog in a tub of water, using the soap to make a lather, rubbing well into the skin and hair, and wash out with lukewarm water thoroughly. This method will also give the coat of hair a bright and glossy appearance and when properly done will destroy all vermin, as well as their eggs, which often are embedded under the skin.—R. V. M.

WALNUT RECEIPTS

(Continued from Page 381)

of sweet milk, add 3½ cups of dry rolled oats, 1 cup chopped raisins and 1 cup chopped walnuts. Sift together 3 cups flour, ½ teaspoon salt and 1 level teaspoon each of cinnamon, cloves and soda. Add dry ingredients to the wet mixture and beat well. Drop from a teaspoon upon a greased pan, leaving room for spreading and bake in a moderate oven. These cookies are delicious and will keep for weeks if put in an air-tight box and locked up.—Mrs. Willis Grove, Inglewood.

Walnut Chocolate Caramels

One cup molasses, 1 tablespoon butter, 2 teacups brown sugar, 3 tablespoons flour. Mix sugar and flour thoroughly before adding molasses. After boiling about 15 minutes stir in ½ cup of chocolate wet with ½ cup sweet milk (cream if convenient). Boil the mixture until it will harden in water. Remove from fire and add one cup broken walnut meats and 1 teaspoon vanilla. Pour quickly into buttered tins; when nearly cold mark off in squares.—Mrs. F. O. R., Kerman.

Karo Nougat

Two cups granulated sugar, 1 cup Karo corn syrup, ½ cup water, white of 1 egg, 1 cup walnut meats broken up. Cook the sugar, corn syrup and water till it forms a ball in water. Have the egg white beaten stiff and beat the candy slowly into it. Then add the nuts and beat till it becomes spongy when tried with the tip of finger.—A. G., San Dimas.

Candied Walnuts

Three cups sugar, 1 cup water; boil until it hardens when dropped in water. Then flavor with lemon. It must not boil after the lemon is put in. Put a nut on the end of a hat pin, dip, take out and turn until cool. If the candy gets cold set on the stove for a few minutes. Grapes and oranges quartered may be done in same way.—Mrs. O. O. Carpenter, Earlimart.

Divinity Fudge

Boil together 4 cups granulated sugar, 1 cup Karo corn syrup and 1 cup water until a little of it hardens when dropped in cold water. Have ready whites of 4 eggs stiffly beaten. Pour the above boiled mixture over the beaten eggs, stirring quickly. Have ready 3 cups of finely chopped English walnuts. Pour these in and beat till it begins to get hard. Do not stir too long as it will turn to sugar. Pour in buttered pans and when cool mark off in squares.—M. W.

Walnut Creams

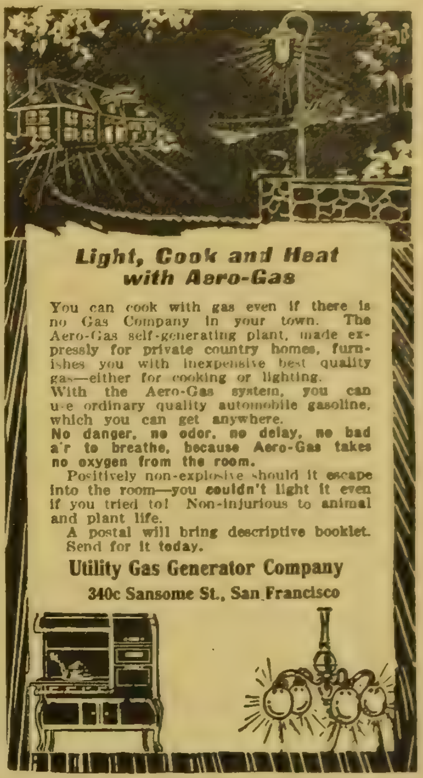
Crack walnuts, preserving halves. Make stiff cream of milk and pulverized sugar. Drop cream on one-half of walnut and place other half on top. Chocolate may be mixed in the creams when variety is desired. These are easily made candies for your bon bon box.—Mrs. W. E. Osgood, Ontario.

THE MOIST MASH

(Continued from Page 377)

all ages than sour milk. Sweet milk is good, too, but it is not a good plan to feed sour milk one day and sweet the next. Always feed it the same way; then the fowls' digestive organs will not have to be continually adapting themselves to the change in diet.

If a wet mash is valuable for laying hens, it is even more valuable for growing stock. It is sometimes objected that a moist mash affects the bowels of the chicks, but I have never found it so, and I have sometimes commenced feeding it as early as the tenth day. The Cornell mash for chicks is mixed always with sour milk, if it is used as they use it at Cornell, and there is nothing better. A very good mash for young chicks is composed of equal parts of bran, corn meal, middlings and rolled oats, with about 5 per cent beefscrap and 5 per cent ground bone added. It is better mixed with sour milk, but very good mixed with water. After a month the rolled oats can be dropped. It is always a good plan to cut a little lettuce or an onion into the chick mash. The chicks like it and it is good for them.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New redwood shingles. Per M.	$1.75
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Cast iron enamel tubs	$14.00
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High closet combination	$12.00
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WALL BOARD	
Former price $25; now	$19.00
Corrugated iron. New stock, per square; now	$3.75
Roofing paper; ready to lay; per roll	$1.00 up
Guaranteed house paints in all colors; per gallon	$1.50
Shingle stain and black graphite roof paint; per gal., 50c; in barrels, per gal.	40c
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Five-panel Colonial doors, all styles	$1.00
Four-panel O. G. door	$1.25
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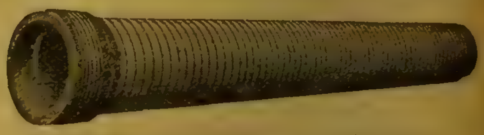

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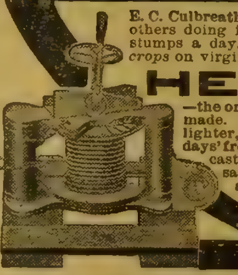
E. C. Culbreath, Johnston, S. C., does it. Thousands of others doing it. Why not you? Pull an acre of stumps a day. Double the land value—grow *big crops* on virgin soil! Get a



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CALIFORNIA CULTIVATOR

Rural Californian combined with California Cultivator

An Illustrated Weekly Magazine, Devoted to the Rural Home and Ranch

LOS ANGELES October 22, 1914 SAN FRANCISCO

Dreams of Summer Days

The warm days of last week brought memories of mountain camp life. In fact, "Indian Summer" in California is most delightful in the summer resorts.

The Use Of Hercules Dynamite On Farm, Orchard and Ranch

HAVE You Received *Your* Copy of "Progressive Cultivation"?

AMONG the hundreds of coupons we receive every month requesting copies of "Progressive Cultivation" there are always a few the senders of which have neglected to fill in the lines provided for the name and address.

We do not want any man to feel that we have neglected his request. In cases where name and address are lacking, however, we can do absolutely nothing.

Have you written for "Progressive Cultivation" and not received a copy? If so you probably mailed the coupon in a hurry and forgot to fill it out. Will you please send the one at the bottom of this announcement, giving your name and address in full. The book will reach you promptly.

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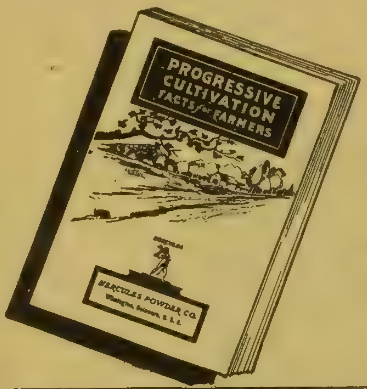
Thousands of farmers are now using Hercules Dynamite and with its aid doing more work and getting better results. If you are not among them please fill out the coupon below *fully* and mail it to us. Your copy of "Progressive Cultivation" will be sent you at once.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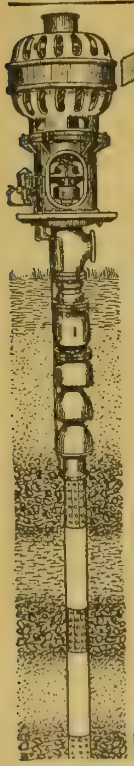

The Waters Deep Under The Earth

are yours at the touch of a switch if you have a Byron Jackson Installation—take the pump pictured here for instance—Latest Improved Deep Well Vertical Turbine Pump with direct connected vertical motor—a combination that guarantees continuous efficient service; requires comparatively no attention and no priming at all—develops slow wells, increases well capacity—costs less to install than any other type of deep well pump.

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are inconsistent terms. You should give your pocketbook as well as your soil a square deal. Proper soil care is the safest investment you can make.

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Phosphate Rock
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MILEAGE—all kinds of mileage, without sacrifices—that is the key to Firestone leadership.

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What Mr. Hospers of Los Angeles saw *in* Milford Valley

The following letter was written by a practical farmer, Mr. P. Hospers of 3015 Budlong avenue, Los Angeles, who has just returned from a thorough investigation of Milford Valley lands. Mr. Hospers was kind enough to permit us to use this letter which was written to a friend (F. P. Gallagher) of Armour, S. D. This is a practical man's opinion of a practical farm land offering. If you are in the market for the best fruit, potato, grain and alfalfa land in the west—read this letter carefully.

Los Angeles, Cal., Sept. 28, 1914.

F. P. Gallagher,
Armour, S. D.

Dear Friend:

I want to tell you about my trip to Milford Valley, Utah, last week. I found one of the finest valleys I have ever seen, nothing like it in South Dakota, Montana, Colorado or Texas, and you know I've been all over those places, having bought and sold land there.

These Milford lands have an extra fine soil and plenty of the best water, mighty cheap, too, for this western country. It is a fine fruit, grain and stock country. Saw wheat that threshed 55 bushels to the acre; saw oats 100 bushels to the acre weighing 55 pounds to the bushel. Saw alfalfa fields that cut 3 tons to the acre and they cut it three times, so you see they got some hay, and it is of the best quality. Saw fields of potatoes that will go 500 bushels to the acre. I saw some of the finest hogs and cattle and I know that is what you like. Climate is just right, nothing like it in the middle west. A man can work outside every day here. Milford is a live town of 1500 people and has a pay roll of $50,000 a month. These lands are from two to six miles from the center of town. The railroad is the main line of the Salt Lake. You asked me several times to let you know when I found a good place. I am sure this is just what you want. You had better come at once and see. I expect to move to Milford in the spring. This land is selling very fast and I would advise you to act quick. The cost is only $30 per acre and the water right is sold at $70 per share, sold on 12 years' time, if desired. This is the cheapest land of this class I've seen out here. With best wishes, I am

Yours truly,
P. HOSPERS, 3015 Budlong Ave.

$30 An Acre **On Main Line of Salt Lake R. R. Adjoining Milford, Utah.**

Special excursions at low homeseeker rates Wednesdays and Saturdays from Los Angeles.

For further information, free illustrated booklet, etc., see

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California Cultivator
Rural Californian combined with California Cultivator
Vol. XLIII No. 17 LOS ANGELES: THURSDAY, OCTOBER 22, 1914 One Dollar Yearly

Planting and Culture of Almonds

Address by Geo. W. Pierce Before State Fruit Growers Convention at Davis

OLD as is the almond, it is grown on a commercial scale today only on the shores of the Mediterranean Sea and in California. Some attempts have been made to produce almonds in Arizona and Mexico, but the output in these and numerous other sections is consumed by the local demand.

The annual average output of almonds from California for the last 15 years is about 2000 tons. It has run from 450 tons in 1898 to 3300 tons in 1910. The crop of 1913, owing to drouth and frost, was but 1150 tons. During 1913 the per capita consumption of almonds in the United States amounted to but one pound for each five people.

There are two great varieties of almonds, viz., those having sweet meats and those having bitter meats. The bitter almond is not grown commercially in extensive quantities outside of the Mediterranean regions. These almonds are chiefly used in the manufacture of prussic acid, bitter almond oil and in perfumery. In California the bitter almond output is chiefly consumed by the nurseryman. It is claimed that nursery stock on bitter almond root is of superior quality.

The almond of commerce, having sweet meats, is divided into hard shelled, soft shelled and paper shelled varieties. These are again subdivided many times to meet the requirements of the trade and to gratify the fancy of supposed originators of varieties. Many of these are well known and standard; others have names known only locally. As a business proposition for the average grower it is best to produce standard varieties having an established market demand.

The almond is supposed to have found its way into California from Europe about 1853. It came to us after long centuries of existence with many of the imperfections that characterized its early career. To a Californian, Mr. A. T. Hatch of Suisun, is given the credit of first having undertaken the improvement of the almond along scientific lines. So marked were the results obtained by Mr. Hatch that the leading commercial varieties of almonds grown in California today are designated as the Hatch varieties. Chief among these are the Nonpareil, the I. X. L. and the Ne Plus Ultra. The first two are the leading and highest priced almonds produced in California at this time.

While Mr. Hatch greatly improved the quality of the almond, the varieties originated by him when planted in the orchard in solid blocks of a single variety rarely give a satisfactory yield. The quality of the product was improved at the expense of the output. To obtain cross-pollination and increased yield it has been found good practice to alternate the Hatch varieties with some hardier almond. Years ago hard-shelled almonds were used for this purpose, but now the Texas Prolific, Drake's Seedling, or other soft shelled varieties are generally used because of their higher market value. Usually two rows of the soft-shelled varieties alternate with four rows of the Hatch varieties. Planting in this manner is advised to facilitate gathering, which will later be explained. The rows should run, so far as may be, at right angles to prevailing winds at the time of blooming, i e., if the prevailing winds are from either the north or the south, run the rows by varieties east and west. This matter should be given the closest attention.

Varieties.

No general rule can be given for the distribution of the several varieties of almonds that will apply to all sections. Experience is the only safe guide as to what varieties should be planted in any given locality. For instance the I. X. L., an extremely shy bearer in many localities, excels all other varieties in certain localities where conditions of soil and climate meet its requirements. When you plant you plant for profit. Before deciding what to plant, find out what varieties have done best in your immediate vicinity, or experiment in a small way until you know what to plant. Neglect to follow this rule has caused great loss to individual almond growers in California and has been responsible for much demoralization in the industry. Apply business methods to the business you are to engage in.

A tree following nature's laws makes the best of existing conditions. Make the needs of the trees your study. Protect them from invasion of all kinds. These trees are your partners as well as your property. You have a right to demand of them full compliance with every term of the existing partnership. They in return are entitled to a full and complete performance of every detail of the contract on your part. It is your duty to make possible the greatest development on the part of the tree. If you have planted wisely and given proper care the trees will do the rest. Unless each member does his part the partnership will be a failure and the business unprofitable.

Locations Favorable to Culture.

The almond, because of its extremely early blooming period, is the most susceptible to frost of any orchard tree of general cultivation. It is best adapted to a light sandy soil, or a grade of land not far removed from a sandy loam. Heavy rains at the blooming period, especially if the weather be cold, are disastrous to the almond. The tree is a most profuse bloomer, but, previous to pollination, at the blooming period, requires mild weather to insure best results. After pollination has taken place, but while the bloom is still on the tree, heavy rains frequently occur without serious damage to the crop.

No soil, not well drained, will produce almonds successfully. Numerous instances are a matter of record where almond trees have been planted on soil apparently adapted to the tree, yet where the water plane during the winter months, stood within four to six feet of the surface, and the trees have died.

Almonds will not do well in a section where there are frequent and heavy fogs. As a rule they will no produce well when planted on low grounds, as they will be more subjected there to the frost than at a slightly elevated location.

From the foregoing it is evident that the productive area of almond culture is limited. Look well to the

(Continued on Page 390)

State Dairy Convention at Modesto

Dr. Leroy Anderson Represents the Cultivator and Writes of Discussions Touching Upon Cooperation and General Dairy Management. He Also Describes Many of the Exhibits

QUITE in contrast to dairy meetings of a decade ago were the gatherings at Modesto the last three days of last week. Thursday was Creamery Operators' day, with a morning attendance of 100, an afternoon attendance of 200 and an evening attendance almost equal to that of the afternoon. In the beginning of the Creamery Operators' Association, we were accustomed to having a score present where now there are a hundred. Friday was the Dairy Association day, or Dairyman's day—the producers' talkfest, as contrasted to the manufacturers' talkfest of the previous day. The numbers equaled those of Thursday, and the interest was even more keen, for Modesto is the greatest dairy cow center in California, and whether the discussion was on manufacture or production, the dairyman of Stanislaus County was the most prominent personage in the hall.

Modesto made excellent preparations for the event and entertained her guests royally. A new auditorium served as the place of meeting, and was large enough to hold several exhibts as well as seats for 400 or more people. Of hotel accommodation the city has all that can be desired, and all visitors were comfortably "slept and eaten." The cooperation between association officers, local dairy interests and the chamber of commerce was complete and cordial.

Quality.

The keynote of creamery discussion was quality of creamery products, especially butter. The concensus of opinion appears to be that butter quality has been retrograding during the past few years. The discussion of Thursday evening is indicative of the situation and the importance attached thereto. "Lowering of Butter Grades," by A. Jensen of San Francisco; "Competition and Quality in Creamery Work," by G. E. Frevert of Salt Lake City; "The Responsibility of the Creamery Operator in Relation to the Quality of California Butter," by S. N. Greene of San Francisco. It was all on quality, and there were three hours of it, the discussion not closing until nearly eleven o'clock. Professor Davis' paper, on stock page, was presented at the morning session, and the reader will see that it is about quality. The butter maker says he cannot make good butter out of poor cream, which implies that the dairyman does not deliver his cream in good condition. This is the beginning, and if a bad flavor injects itself into cream it is mighty difficult to eject it anywhere along the line of manufacture. I hope in a later report of the convention to go more into detail on the subject of

(Continued on Page 399)

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Alfalfa, Clover, Vetch, Field Peas and Beans

Inoculate Forage, Cover and Green Manure Crops with

The Improved German Soil Inoculator, Nobbe-Hiltner Process

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A legume inoculated with "NITRAGIN" Pure Culture is the best *shade or cover crop* because of the quick growth, vigor and luxuriance of plant, and because it is a *soil-enricher* instead of a *soil-robber*. It is the best green manure crop because of the immense quantity of new nitrogen it adds to the soil and the extra richness of the humus.

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Alfalfa—You can't afford to risk failure on this wonder crop. For Alfalfa success, inoculate the seed with "NITRAGIN."

"NITRAGIN" invariably insures a perfect "catch," quick growth, enormous yield and extra food value.

Inoculate *all* legumes with "NITRAGIN" Pure Culture. A special strain for each legume—27 varieties.

Pure Culture inoculation is endorsed by Government authorities, state experiment stations, practical farmers, agricultural experts and soil culturists. Let us send you testimonials and other *proof*.

Price: Garden size $1.00 per can; acre size $2 per can; 5-acre size $9 per can. F. O. B. Postage and express extra. Parcel Post, 10c per acre extra. Ask your seedsman or fertilizer dealer for "NITRAGIN."

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Citrus and Tropical Fruits

DISEASES OF THE OLIVE

By W. T. Horne

Before State Fruit Growers Convention.

IN a general way the olive is one of our most sturdy and healthy trees. When planted within the regions adapted to its culture it is tolerant of minor variations in soil and weather and is comparatively free from serious diseases.

Root Diseases.

Fungous root rot or oak fungus disease is the same trouble which affects most of our orchard trees. The fungus spreads to healthy roots from infected wood lying in the soil. The bark is first killed in a very characteristic manner, and the wood of the root decays gradually with a moist yellowish white uniform rot which progresses until the root is completely destroyed. The fungus goes over from one root to another, so that after one tree dies, usually in a few years those next to it die also, and a spot is formed in the orchard which continually enlarges. There is as yet no simple and single treatment for this trouble, but by careful study some means can probably be found to combat it in most situations.

The olive appears to be free from injury by crown gall or nematodes. Olive knot appears on exposed roots, but seems unimportant as a root disease. Cultivation so near the tree as to cut and mark the roots is wrong and should be avoided because such cuts give opportunity for wood decay and favor infection with olive knot.

Diseases of Trunks, Branches and Twigs.

Olive knot, or tubercle disease, is a disease primarily of trunks and branches, although exposed roots and leaves may be infected. It consists of localized abnormal enlargements or galls. These are usually about the size of walnuts on healthy twigs, but on weakened small twigs are much smaller, sometimes scarcely noticeable. On the thick bark of the trunk they may be several inches across. The knots are distinguished from the normal enlargements on olive trees by the fact that the normal structures remain healthy and green and give rise very often to new shoots. The olive knots, however, crack and the outer part dies while the inner part usually continues to grow for several years, finally forming a deeply cracked growth with the outer parts dead and pushed apart. When the knot is cut open it is found to be a mixture of bark and wood with watery cores or pockets in the center which later dry out.

The result of olive knot on the tree varies with the number of knots formed. A few knots apparently do little harm. Many knots choke and depress the vitality of the tree. I have not seen a tree killed by it, but some seen have doubtless been rendered unprofitable. It is important enough to merit serious consideration by the olive growers and it should be avoided or eliminated if possible.

One serious feature of olive knot is that it becomes worse with increase in the vigor of the tree. Gain in size and number of olives per tree will be accomplished largely by increasing the vigor of the trees. Therefore we may expect the disease to become more serious as the culture of the olive is improved.

The cause of olive knot is a specific kind of bacteria. These bacteria live in the fresh, moist part of the knots and sometimes work out into little pockets in the wood immediately below the bark, or in twigs sometimes get into the pith. They are not distributed throughout the healthy parts of the tree nor are they in the soil nor in manure. Practically they live only in the living knots or very near them.

Olive knot spreads through the bacteria being washed out of the knots by rain, by subsequent spattering and by accidental methods of transfer from tree to tree while the trees are wet, and by being washed down into crevices in the bark or by being brought into contact with living inner bark through being washed into new wounds. We believe there is no spreading of the knot while the trees remain dry. After a day or two of rain whitish drops can be seen in the cracks in the knots. If a little of this whitish liquid is pricked into healthy bark a knot begins to grow after a few weeks. If the whitish material is examined with the microscope it is found to contain great numbers of the bacteria which cause the disease. These bacteria can be grown rather easily in cultures and studied. One

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of the most interesting facts about them is that they are very easily killed by drying or exposure to sunlight. All the bacteria which might be on the surface of a tree after several days of rain would be killed by one day's exposure to bright sunshine. Some, however, might be protected from light and drying in crevices of the bark and would continue to live.

Remedies suggested up to the present consist in cutting off the knots on the trunks and larger limbs. The knots should be cut to the level of the sound wood and perhaps one-eighth inch of bark removed about the knot. The cut should be made so that a smooth, flat surface remains for healing over from the edges. Some knots will reappear at the edges of the cuts and these should be removed as early as possible. All cuts should be immediately washed with a disinfectant. Corrosive sublimate, one part to 1000 of water by weight, is recommended. The first cutting should be made in early summer and the second in early fall, and the process repeated each year. At the fall treatment the wounds should be coated with asphaltum to prevent wood decay. So far as possible twigs with knots should be pruned out, but I do not now recommend excessive reduction of the bearing wood, as I hope within a few years to get results which will justify me in recommending a definite course of treatment.

Withholding water or in any way reducing the vigor of the trees cannot be recommended. No varieties are immune, though the Mission is doubtless much less injured than the Manzanillo. The most desirable varieties should be planted regardless of knot resistance. Probably many oil olives can be profitably grafted over to pickling varieties, but where the trees are infected with knot I should recommend that the knots be carefully eradicated from the tree one or two years before grafting over. Several varieties of oil olives are very susceptible to knot, as well as being undesirable in other ways even for stocks. I have not observed the comparative resistance of the Ascolano.

Wood Decay.

This is an important factor with olive trees, although its results will not be seen so quickly as with trees ike peaches. We have repeatedly found olive trees infected with wood decay fungi from pruning wounds and sunburn.

Exanthema.

Exanthema is a disease of olives not previously reported. Several years ago a case was called to my attention and examined in a preliminary way, in which the symptoms corresponded very closely with those of exanthema of citrus trees. It was called exanthema in my notes. The disease consists in the dying back of growing tips and the pushing out of numerous shoots from the nodes beow. There is a more pronounced puffing of the bark than in citrus rees, with areas of dead tissue in he puffed regions and an unusual prominence of the lenticels. During he past year the disease has been much more carefully studied by Proessor Smith and Mr. Boncquet and believe the general correctness of my idea of the disease has been supported rather than disproved.

The trouble appears to be associatd with defective drainage and peraps alkali, but these may not be the cause. It seems to be as serious for the olive as exanthema is for citrus fruits, but thus far has not appeared widely distributed.

Leaf Diseases.

Leaf-spot is the name given to the disease caused by the fungus Cycloconium oleaginum. Rather large sooty spots appear on the leaves, but apparently cause only slight injury. Some leaf spot diseases of other countries have not come to my attention from California. I am not aware that any of these are particularly dangerous.

Fruit Diseases.

Dry Rot is of rather common occurrence, especially on some varieties. Sevillano is said by some to be especially susceptible. I do not know the cause of this trouble nor any remedy to suggest.

Legal Queries

Louis B. Stanton, attorney, 243 Wilcox Building, Los Angeles, will answer legal queries in this department.

Immediate mail replies cannot be given except where fee to Mr. Stanton is paid. When replies are wished in Cultivator address query to 115½ N. Broadway, Los Angeles.

Appointment of Guardian.

A. is a weak old man of 75 who has deeded to his housekeeper his home and all the furnishings, reserving to himself a life interest. In January of this year the deed was recorded. The children of A. wish to know if there is a possibility of getting the old home back into the estate. The value is about $4,000.00. Is it best to await the demise of A., or have a guardian appointed and sue at once? What must be shown to get appointment of a guardian?

In order to procure the appointment of a guardian it is necessary to file a petition verified by the oath of a relative or friend of the old gentleman, stating facts to show that he is mentally incompetent to manage his property. The phrases incompetent, mentally incompetent and incapable are defined as meaning a person, who although not insane is by reason of old age, disease, weakness of mind or from any other cause unable unassisted to properly manage and take care of himself or his property, is by reason thereof likely to be deceived or imposed upon by artful or designing persons. For many reasons it would be far better to have a guardian appointed and empowered to take such proceedings as may be necessary to properly protect the property of the old gentleman and procure the return thereof.

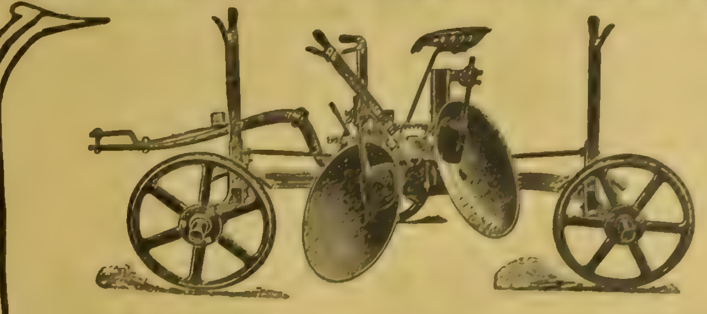
Trespassing Stock.

If one cultivates a garden or orchard must he fence against stock which the owner may allow to roam at will? What protection has one under the state law; also, do different counties have ordinances covering this matter, or have they power to enact ordinances covering the matter?—Subscriber, McFarland.

Under the common law of England the owner of animals trespassing upon unenclosed property could be held liable in damages for all injuries to said lands or the crops theron. The stockmen in the early days of California procured laws changing this rule so that no damages could be recovered where the property was not enclosed, and suits brought by the owners of unenclosed property against the owners of stock were merely thrown

(Continued on Page 407.)

Mathews Reversible Twin Disc Plow



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It leaves no water furrows. Discs are fixed in exactly the same working position every time the plow is lowered. Two discs wear twice as long as one—but cost you no more.

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Deciduous Fruits

PLANTING AND CULTURE OF ALMONDS

(Continued from Page 387)

soil and climatic conditions of the section in which you propose to plant.

Planting.

The almond, being a long-lived tree that attains large proportions, needs more space than the average deciduous orchard tree. It requires a large area from which to draw nourishment and obtain sunlight. Early orchardists in California planted almond trees from 16 to 20 feet apart. Many of these later dug out every other tree. Many who did not do this finally dug them all out. It is best not to plant the trees less than 25 feet apart. Some of the wide spreading varieties should not be less than 28 or 30 feet apart. There are two methods of planting. The one largely used is where the trees are equally distant in the rows and between the rows. Its chief disadvantage is a large open space between each series of four trees. Another and more equitable one so far as the trees themselves are concerned is the equilateral triangle method. In this the trees are equally distant from each other in the several directions. The chief objection to this method is that cultivation is somewhat hampered.

Before planting have the ground well plowed, harrowed and free from large clods. Do deep plowing and break up any hardpan that may be there as a result of previous shallow plowing. You cannot do this after planting. It is most essential that this be done to induce roots to seek permanent moisture below.

Be generous with the trees in digging holes. Dig a hole large enough to give the spreading roots ample room to straighten out. Dig deep enough so that you can put some fine surface earth in the bottom of the hole to bring the tree up to about the height it stood in the nursery. Fill the hole at least half full of well pulverized surface earth before returning any soil taken from the hole. Clods in a tree hole mean air spaces that will dry out the roots.

Too much care cannot be given to the nursery stock you plant. Get the best stock obtainable. A tree that has been neglected or badly handled in the nursery will prove poor property. One cannot afford to accept such a tree as a gift. Get good healthy stock, but do not imagine you must get a tree full grown. A tree of medium growth is better for planting. Look well to the roots of the nursery stock; they are the dividend payers. If they are numerous and healthy you can grow a top cheaper than you can buy it. As the very existence of the tree, not to mention its productivity, depends chiefly on its root system, that system should be as near perfect as it is possible to realize. Almond nursery stock is usually on almond root, and in most instances it is the best. It gives a hardy, long-lived tree with a great network of roots, some of which penetrate the soil to considerable depths in search of moisture. Almonds on peach root are shorter lived and require more moisture.

Frequently the roots are bruised or broken in digging. These damaged roots should be cut off. The remaining ones should be spread out in the hole in such a way that when they grow the tree will receive sustenance and support from all directions. In cutting the roots cut in a slanting direction from the under side of the root so that the freshly cut part may rest on moist soil. It is well to dip the roots in thin mud at time of planting to exclude air and assist in starting growth. If the soil be dry at time of planting five or ten gallons of water thrown into the hole will greatly help the tree in beginning the struggle for existence under new and frequently trying conditions.

When the tree is planted cut the top off to within about 18 inches of the ground. Cut in a sloping direction on the north side of the tree to prevent exposure to the sun. Leave a bud near the top on the south side of the tree that early development may protect the wound. Shield the body of the tree from the blistering rays of the sun and the depredations of animals and insects. Specially prepared tree protectors can be obtained easily and cheaply in the market. If these be not available, paper, burlap, shakes or whitewash will, if installed in time, prove a good investment.

Cultivation

Cultivate thoroughly to retain moisture in the soil as well as to destroy noxious weeds. A well pulverized soil surface for the summer months is a contribution to future success that you cannot afford to neglect. It retards the evaporation of moisture stored in the earth by winter rains, thus forming a reservoir to be drawn upon as needed. One must not lose sight of the fact that the period of annual growth and activity of the almond extends over the greater part of the year. If the tree is to have vigorous buds from which to mature profitable crops, conditions must be such that the moisture nature intended for the tree shall be available at the proper time. In the wild state in most instances the trees find sufficient moisture to maintain existence. With the domestic tree, however, additional burdens are added. It must not only maintain its existence, but it must produce profitable crops.

Pruning

Beginning with the second year shape the tree for further usefulness. Start it low down as a matter of protection to the tree itself, also to shade the ground, to prevent evaporation and for convenience in harvesting the crop at time of maturity of the tree. Carefully train main branches so that nuts may be produced on all quarters of the tree. Do this carefully and later pruning will consist of an occasional thinning out only. Remove all water shoots or suckers. They rob the tree of much of its substance that should go to the crop.

Troubles

The almond tree, while perhaps as free from insect and other pests as any other cultivated tree, still has its troubles.

Shot hole fungus sometimes appears. The ravages of this can be checked or lessened by spraying with Bordeaux mixture during the dormant period of the year, and at the beginning of blooming.

The peach moth is a worm that at times causes much damage to the almond crop if neglected. Should it appear treat it with a mixture of Paris green and lime in the proportion of about 1 to 20. Apply with dust spraying apparatus.

Red spider is the most persistent insect pest of the almond tree. It is effectively handled by spraying with sulphur. Any of the flowers of sulphur will prove effective. It is best to mix the sulphur with lime as a carrying medium in the proportion of 25 to 50 per cent sulphur.

If sulphur is to be applied at the same time that the peach moth needs attention, add Paris green to the sulphur and lime mixture and save one spraying. These suggestions have been made on the supposition that the average almond grower will use a dry rather than a liquid spray. The dry spray is much more economical in its application than is the wet. It is far less disagreeable for the operator and has generally proved itself effective when properly applied. For a dry spray use lime, 40 pounds; sulphur, five pounds, and Bordeaux, three pounds.

A home-made mixing machine is easily constructed. Take any good heavy barrel, bore a hole in the middle of each head and put a round shaft completely through the barrel, leaving it project at each end far enough to give bearings on which to revolve. Put a crank on one end. Cut a door in middle of barrel at point of greatest diameter and fix so that it can be tightly fastened. Put in materials and turn until all are thoroughly mixed.

The best way to apply the dust spray is with a specially prepared dust spraying machine. These are made in different sizes. The smaller ones are made to run by chain geared to a sprocket which is attached to a wagon wheel. The larger ones are run by gasoline power. Those geared to the wagon wheel are cheapest and easiest to operate. They are efficient and well adapted to the needs of the average grower. The first cost is moderate and anyone having the least adaptability to machinery can run them. Add to this a man, a span of horses and a wagon and the equipment is complete. Having this, use it. The ingredients for the mixture cost but little. The ravages of the insects and other pests run into dollars very fast.

Use the dust spray early in the morning while the dew is on the foliage. Begin on the side of the orchard from which the wind is blowing. Drive alongside each fourth row. The machine will blow the spray high into the air. In settling it will be distributed over the entire adjacent trees. Repeat this operation several times each season, each time going in different rows. It is best to select for spraying a morning when there is a dew and but little wind.

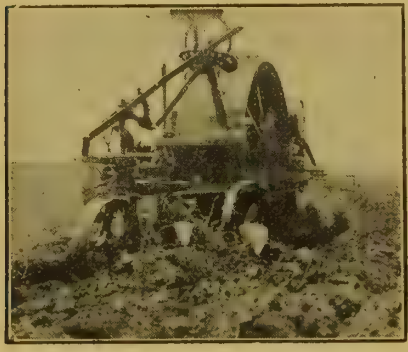
Harvest

Provide yourself with some kind of mechanical huller and separator. Life is too short and time too valuable to hull almonds by hand. While there is some loss from machine hulling and separating it is more than offset by the saving in expense and the lessening of the number of employees. Machines of varying capacities and more or less efficiency are in the open market. While the almonds may be left on the tree for a time after the hulls have been opened, without serious loss, it is best and most economical to gather them as soon as the hulls open and expose the nuts sufficiently to hull easily. If left much after this time some of the hulls will begin to dry and draw closer to the nut, making hulling more difficult. Then, too, the nuts will begin to fall to the ground of their own accord. Should a heavy wind occur at this time many nuts will be blown from the tree. The expense of picking almonds up from the ground is fully three times that of gathering them in the usual manner. Promptness pays in the handling of almonds. Be ready for the harvest and have a crew of gatherers in proportion to your acreage.

Provide canvas sheets to spread beneath the trees on which to knock the almonds. The size of the sheets needed will depend upon the size of the trees in the orchard. Have two sheets for each tree. The two sheets when spread out should cover from 24 to 40 feet square. It is false economy to use a sheet too small for your trees. Almonds will be continually knocked off the sheet on to the ground, thereby increasing the cost of gathering, to say nothing of the many nuts that will not be picked up and thus become a total loss. The methods of using almond sheets vary with the whims and ingenuity of the users. Some spread the sheet beneath the tree, knock the almonds and either box or sack the product of each tree, direct from the sheet. If but few nuts are obtained some drag both sheet and nuts to the next tree before sacking to save time. Another and better way is to have a sled 16 feet long, about 40 inches wide and 6 inches high, with a tight bottom. Have one end of the sheet tacked to one side of the sled. Have boxes ranged inside sled along the side next to sheet and when sheets are emptied the almonds go directly into the boxes. Another and still better way is to have a 16-foot pole sewed into a part of one end of each sheet and have that pole on arms so hinged to the sled that the sheet may be used on either side of the sled. In this way two rows can be gathered at once and thus save time in moving. While boxes are largely used to move almonds from the orchard to the almond shed, they are expensive and deteriorate rapidly. Their hauling and the gathering up of surplus boxes consume time.

Many growers use grain bags. They are easily carried on the sled, cost but little to distribute, and there are no stragglers to gather up. When bags are used, dump almonds into sled and have one man shovel them into a sack, using a simple device for holding the sack, while the others are knocking the next tree. If you are in the grain business as well as almond growing, use new sacks for your almond work. After the season is over put the sacks away carefully and use them for grain the following year. In that way the sacks for almond use cost you nothing save the interest on the first investment.

One good heavy horse will pull an almond sled from tree to tree and save much of the wear and tear incident to dragging sheets over the



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Gathering

To knock the almonds from the tree good, tough, springy poles should be used. The poles should be as light as consistent with the service expected. A tamarack or fir pole 16 to 24 feet long and about an inch and a half in diameter at the butt is an ideal pole for knocking almonds. Take the bark off while green. If too heavy at the butt end shave it down so that it can be easily handled. Tie in bundles to keep straight and store inside the house. With proper care and careful handling a good pole will last several seasons. Sawed Oregon pine lumber is sometimes used for poles, and if good lumber is obtained the result is a good pole. Hickory, too, is used with good results. Bamboo has been tried, but while easy to handle, it cracks so badly when exposed to the sun that it can hardly be considered a success. Have your crew use poles of different lengths. One or two very long poles is all that is needed at a tree. Almonds on the lower limbs can be gathered more cheaply with short poles. If the trees be old and extremely high, have a man climb into the upper limbs with a short pole.

Do not imagine that because you have a pole you must necessarily beat the tree to loosen the nuts. Put the pole between the branches and vigorously work it back and forth, shaking the limbs and loosening the nuts. Some seasons almonds are harder to knock than others and require harsher treatment, but remember that tree is your friend. Do not permit it to be abused. The buds you knock off this year may be the ones that next year would be fruitful. Every limb you break off means a wound to heal. Every unnecessary burden placed on the tree draws from vitality that should be expended in the production of nuts.

Hulling

Almonds should be hulled as soon after gathering as practical. Spread the clean nuts in the sun to dry. Tip the trays slightly toward the south that the nuts may dry quickly. The time allowed for drying depends upon the condition of the nuts at the time of gathering. No almonds should be sulphured until sufficiently dry and brittle to break without bending. A good and convenient size of tray is one three feet wide by eight feet long, having two-inch sides. In the early part of the season while the nuts are quite green they should be raked frequently in the trays to insure drying quickly, and evenly and to prevent mold.

Sulphuring

When the nuts are thoroughly dry the outer shells should be slightly moistened that they may readily take sulphur and be bleached in the shortest possible time. Great care must be taken in sulphuring lest the kernel be affected. Should this take place the nut will soon become rancid and be ruined. Less bleaching is being done now than formerly. Stack the trays of nuts on a car and run them into a sulphur house. Twenty to 30 minutes is sufficient for paper shell varieties. Soft shells would take a little longer. Hard shells are rarely bleached and never are when used for nursery purposes. After bleaching the car containing the almonds should be allowed to stand 24 hours in the open to permit the almonds to become dry. Do not expose them to the direct rays of the sun after bleaching, as it will darken them. When thoroughly dry sack and they are ready for market.

Marketing

We have now reached a very critical stage of the almond business. It is the goal we have long had in our mind's eye. After all the months of anxiety, is our year's work to be a success? Having the crop, it all depends on the marketing. Almost anyone at all adapted to the business can attain average success as a grower. To dispose of the crop to the best advantage, and at the same time to do something to build up the industry and place it on a firmer commercial basis is a task worthy of the best business ability. The latter requires a different sort of ability, a special training and time to devote to the work which the average grower has not at his command. A grower, in the disposal of his product, comes in competition with, or deals with expert salesmen. The grower is at a disadvantage. He has not the data upon which to base conclusions and establish values. He is not familiar with the tricks of the trade. He may occasionally make a creditably fair sale, but in the long run the experience of the specially trained man will beat him. The trade is organized. The grower must meet organization with organization. Organized producers hold the whip hand. Singly, they are easy prey. It is one thing to produce an almond. It is quite another thing to sell it.

Previous to 1910 the almond growers of California were without effective organization. In that year the California Almond Growers' Exchange was organized. Since that time the output of the state has greatly increased, foreign importations have increased at the same time, but prices have been much better, markets have been steadier and speculation in our products has been largely eliminated. Improved conditions generally prevail. Cooperative buying of supplies has proved an economy. New markets have been exploited. Further exploitation will be necessary when the recently planted orchards come into bearing. Lend a hand in the business end of the occupation. You are needed. The benefits will be mutual. Join a local association. Present your troubles, for you will have them, to the organized growers. Get the benefit of their combined intelligence and experience. Get the benefit of the expert salesmen employed by them. In other words help develop and protect the almond industry. Remember there are two equally important branches of the almond business. The first is the production of the almond. The second is its marketing.

RIVERSIDE FAIR

Saturday at the Riverside fair was called "Everybody's Day," and it seemed so from the crowds which attended. The day opened with one of the finest stock parades the southern end of the state has seen for years. The blue ribbon winners led off with high heads as the bands played the marches. The exhibits were fully up to the best, excepting, perhaps, the implement exhibits, which for some reason were not so extensive as one would expect. The poultry exhibits brought out some very fine specimens, though in much fewer numbers than was hoped. The dairy classes were well filled and some remarkably fine animals were in the stalls. Livestock men from many sections of Southern California were present with blue ribbon winners.

Financially, the management announces that the fair was a complete success. This statement was issued by one of the officials:

"The attendance every day has been beyond our expectations—we could hardly have handled larger crowds. All expenses of premium awards and other expenses of the week will be met, and I believe we will have a balance to apply toward permanent improvement. The officers of the association are certainly appreciative of the way the people of Riverside, of the county as a whole, and of the neighboring cities have supported us. It makes our annual fair a certain success, and we will be able, with the encouragement of this sucess, to make it bigger and better next year."

The final feature of the fair was the horse show of Saturday evening at which roadsters, fancy harness animals, hunters and jumpers combined with Riverside's best society in making a notable social function.

The management is already planning for another and greater fair for 1915.

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This makes a splendid showing. —Wm. Chappelow.

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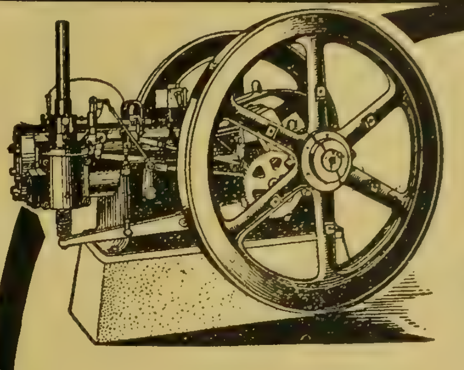

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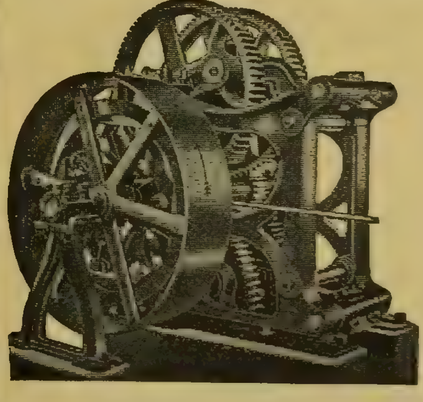

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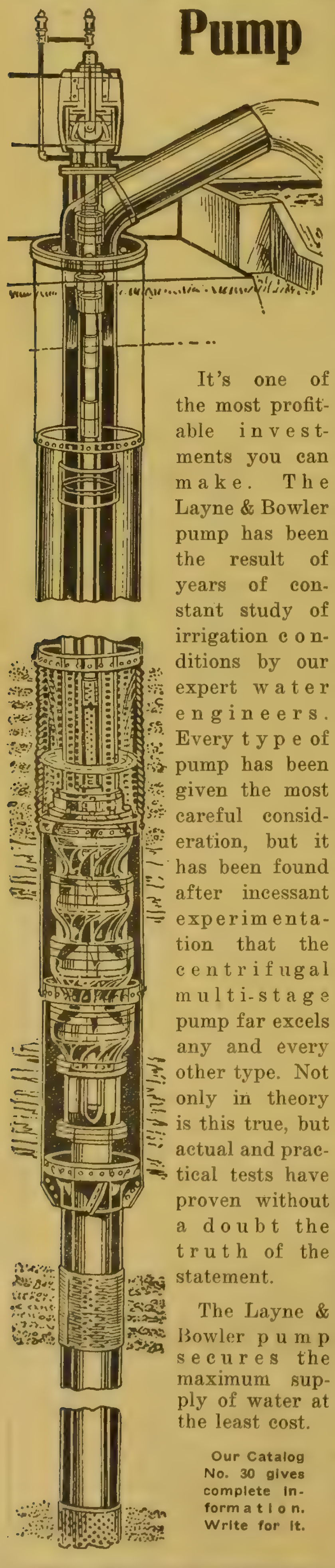

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General Agriculture

THE VALUE OF FALL PAINTING ON THE FARM

Written for California Cultivator by Roy C. Sheeler

THE use of paint on the farm is not an expense. It is a tremendous asset, provided the right kind of paint is used and it is applied the way it should be. Well painted farm buildings spell prosperity in capital letters.

Results obtained by paint depend upon several things. First, the selection of the paint. In times past white lead and linseed oil have been considered standard paint materials. Scientific investigation and tests, however, have proved that these do not give the maximum protection. While paint is a beautifying agent its main purpose is to afford the necessary protection from the elements to the surface on which it is used. It is a well-known fact that carbonate of lead is one of the easiest pigments to break up and incorporate with linseed oil. If carbonate of lead is examined under the microscope, it will be found to consist of large, irregularly-shaped crystals which do not intermingle with one another but leave large open spaces between them. The formation of carbonate of lead can be compared to a number of coins laid edge to edge. They do not fit together closely, but leave spaces between them. A paint composed of carbonate of lead and linseed oil, when mixed by hand, will have such open spaces in it, allowing the moisture and dampness to penetrate the lumber and cause the paint coating to peel and crack. Even if the basic elements just mentioned were found to produce the best results, yet if mixed by hand the paint will not have the covering capacity nor the durability of a paint made by the up-to-date paint manufacturer who uses modern machinery in the manufacture of his product.

The reliable paint manufacturer today, who puts out a trade-marked brand on which dependence can be placed, has found that a combination of certain pigments overcomes the chalking and cracking incident to the use of carbonate of lead only when mixed with linseed oil. Such a paint, if stirred thoroughly so that no pigment is allowed to remain in the bottom of the can, and brushed out well when applied, will present a smooth, solid coating through which moisture cannot penetrate. You will therefore see that if no moisture is allowed to go through the paint coating the lumber must be preserved from decay.

Second, the time of applying the paint has a great deal to do with its wearing qualities. In the fall the heat of the summer has dried out the lumber, putting it in condition to absorb the paint coating to the largest degree. It is extremely important that the surface to be painted should be absolutely dry. Some paints when used over damp surfaces do not crack or peel, but are so porous that the moisture passes through it. Such a paint is not fit to paint with, for it stands to reason that if it allows the moisture to pass through it from the lumber it will also allow the rain to pass through it to the lumber, thus failing completely to perform its duty as a protective covering. The presence of insects is diminished in the fall so that the appearance of your building will not be spoiled by their coming in contact with the painted surface. After the grain has been harvested and the majority of the heavy farm work done, you could have the painting of your house, barn and other outbuildings done at odd moments.

Third, the method of applying the paint. If a package of mixed paint is bought, the can opened and not stirred thoroughly so that the pigment is mixed with the oil perfectly, you will not obtain the proper covering capacity nor the protection you should from such a paint. A paint must be stirred so that no pigment is allowed to remain at the bottom of the can. This may take a little time, but it will be worth while. If the building has not been painted for some years and the present paint coating has almost entirely disappeared from the surface, you should add from a pint to a pint and a half of pure raw linseed oil and a half pint of pure spirits of turpentine to each gallon of paint for the first coat. Make sure, however, that these thinners are absolutely pure. There is nothing that will kill the life of a good paint quicker than to use some of the doped and cheap oils and linseed oil substitutes on the market. See that the first coat is brushed out well. By adding these thinners you will insure deep penetration of the first coat, which is absolutely necessary for the best results. The second coat of paint should be used just as it comes from the can, after seeing that it is thoroughly stirred. See that this coat is brushed out well also. Much better results will be obtained by the use of two thin coats, brushed out well, than by one heavy coat.

ALKALI AND ITS TREATMENT

By R. F. Hare, Chemist, New Mexico College of Agriculture

Alkali is an accumulation of soluble salts formed from the weathering of the rocks and retained in the soil because of insufficient rainfall to leach them out into the streams and thence to the sea. The heavier precipitation in the mountains and highlands causes a partial leaching of these salts and a resulting concentration in low places in sufficient quantity to injure plants or wholly prevent their growth.

The term "white alkali" is a misnomer, since the salts composing this "alkali" are all neutral. Sodium chloride (common salt), sodium sulphate (glaubers salt), and magnesium sulphate (epsom salt) are the salts usually present in this alkali. They are associated with some carbonate of lime and gypsum that are not only harmless, but may be beneficial.

The term "black alkali" is given to carbonate and bicarbonate of soda (sal soda and baking soda). They are true alkalies, and because of this property, will corrode the stems of plants. For this reason they are very much more injurious than the neutral salts constituting white alkali. They are called "black alkali" because they dissolve humus and form a black deposit when brought to the surface during dry seasons. Black alkali cannot exist in the presence of gypsum, which is its chemical antidote. Since gypsum is present in Rio Grande water, no soil irrigated with this water will be troubled with black alkali. The moist, "greasy" spots in this valley sometimes called black alkali, are more likely due to come of the neutral deliquescent salt called calcium chloride, mixed with the white alkali salts named above.

Treatment

No chemical antidote is known for white alkali, as is the case for the black alkali. It must, therefore, be removed by mechanical means. When the water-table is so near the surface that capillarity is established (i. e. "subbed land"), the only remedy is drainage. Experience has shown that where "subbed" lands have been drained they are rendered highly productive.

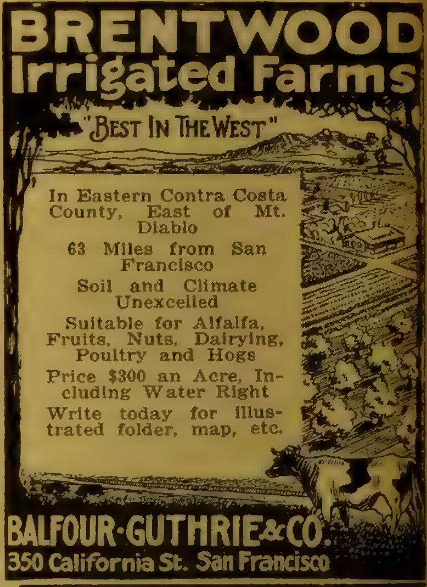
Alkali can sometimes be leached from the surface to the underflow waters, or beyond the point at which they are likely to rise by capillarity to the surface. Attempts to wash the surface accumulations to a lower locality are not very successful, because of their extreme solubility and the readiness with which they soak into the soil. Attempts to remove alkali by "absorbing" it with certain growing crops have proven very unsuccessful.

Frequent cultivation and irrigation, or any treatment that will prevent surface accumulation, is desirable, because the damage is likely to result near the surface; hence the alkali should be kept down.

Tolerance to Alkali

Fruit trees, as a rule, are quite sensitive to alkali. Pears and figs are the most resistant. Cottonwoods, mulberries and willows are resistant ornamental trees.

Kaffir corn, milo maize and all the sorghums are quite resistant to alkali, as are also barley, and, apparently, some varieties of wheat. Bermuda grass will stand large amounts of alkali; as will old alfalfa, unless the alkali is from "subbed" land in which case the alfalfa might die from excess of water around its roots.



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Veterinary Queries

Answers in this column by Dr. Wm Petrie, 2714 South Harvard Blvd., Los Angeles, are without charge. For immediate mail answer remit $1.00. In writing questions give full symptoms or particulars of injury of animal.

Milk Suppression.

I have a three-year-old heifer that calved yesterday, but she has no milk. I have not milked her for four weeks. When I started to dry her up she was giving six quarts of milk a day. She is in good condition and was never sick in her life. Am feeding pumpkins, alfalfa hay and green alfalfa. Did I let her go dry long enough and will she come to her milk again? —Subscriber, San Jacinto.

No one has yet discovered the cause for the milk not starting in such cases as you describe, but the records show that now and again just such cases do present themselves. Treatment in a general way only can be suggested. Give plenty of sloppy feed and rub the udder with the hands and go through the motions of milking for ten minutes or more at the regular time of milking. This has started some cows and they came to their milk again as good as ever. This is only another case to prove that what has been said before in these columns is true, that is, that more damage is done in drying up cows than in milking them as long as they give any milk. When a cow is doing well do not try to change her habits.

Scours

I would like advice about my sick calves. They get sick when from one week to two months old. The first symptom is scouring. In two or three days they stop drinking milk and take very little water, and in five or six days most of them die. Three or four days after they are taken sick they also show difficulty in breathing. Post mortem examination shows inflamed bowels and lungs. Last year the same trouble occurred. Called a veterinarian and he did not seem to know what was wrong, only said it was bowel trouble and advised giving castor oil but it did not seem to do them any good. I feed them sweet milk for 15 days then change to skim milk and add a handful of middlings. What can be done for them?—Subscriber, San Luis Obispo.

There is surely something wrong about your place, either in the water, feed or surroundings. Would advise whitewashing everything where the calves are kept and put lime on the discharges from the sick ones. As soon as one is noticed ailing put it by itself in a small enclosure and sprinkle the place white with lime. You can often get a barrel of air-slaked lime from a dealer for little or nothing. For treatment give Zenoleum. Put a teaspoon of the Zenoleum in a teacup of water. Stir well and give a teaspoon of the solution with two or three tablespoons of milk at one dose. Repeat this three or four times a day. This treatment will generally cure scours in a day or two. Zenoleum is a good disinfectant and germicide and you would do well to have a quantity on hand. Another good remedy for scours is Tannoform. Give 15 or 20 grains once a day for a week. It may be given in a little milk or on the tongue. If you are feeding milk that comes from a separator you should add some fresh milk to it. It is said that the air that is forced into the milk by the separator causes indigestion.

Broken Wind

I have a fine mule that acts as if he was just off a fast drive or long pull. He puffs for want of breath but does not sweat much. He does not seem to be able to get enough air into his lungs, and he puffs when he is not working. Otherwise he is very healthy. Your advice will be appreciated. — Subscriber, Tulford, Florida.

It may be broken wind or heaves, or sometimes in the fall of the year the hair on an animal gets very thick and seems to close the pores of the skin, and we find such symptoms as you describe. We would suggest that you clip him and then give him a good grooming every day. For internal treatment get the following: Tincture of aconite four ounces, tincture of digitalis eight ounces, tincture of stramonium 12 ounces and spirits frumenti enough to make one quart. Mix and give half an ounce on the tongue morning and evening. Get a black rubber syringe that holds one-fourth of an ounce and give it twice full for a dose, or maybe he will eat it in some ground feed.

Lymphangitis.

One of our mules has a badly swollen hind leg. She was taken with what seemed to be cramps in this leg and then it began to swell. It is swollen from the ankle way up into the udder. What is the cause of this and what would you advise as a remedy?—Subscriber, Hinkley.

Inflammation of the lymphatic glands retards the circulation and the refuse matter is not carried off, so of course the parts swell. It is caused by overfeeding and a sluggish condition of the circulation. To get relief a good purge is necessary. Get a pint of raw linseed oil, two ounces of turpentine and four drams of aloin. Mix and give at one dose. Following this get your druggist to prepare the following powders: Nitrate of potash eight ounces, powdered gentian three ounces, powdered nux vomica two ounces and bicarbonate of soda three ounces. Mix and divide into 20 powders. Give one powder every night. Rub the limb with a stiff brush several times a day and exercise the mule some, but not to the extent of hard work. If the swelling does not leave soon, then use this lotion: Chloride of zinc one ounce and water one gallon. Mix and apply enough to wet the swollen parts once a day. The lotion will do more good if you warm the amount you use just before applying it. Do not pour it into a metal dish. Warm it in an earthen or granite dish.

Coffin Joint Lameness.

Can a horse, sprained in the coffin joint of the front foot last march, be cured? Have used liniment and blistered it, but she is not well.—Subscriber, Watsonville.

Coffin joint lameness or navicular disease of long standing cannot be cured, but often lameness of the foot is thought to be one of those diseases when it is really something else that can be cured. Remove the shoes and cut the wall and heels short, as you would when preparing the foot to be shod. Do not cut the frog. Let the horse run barefooted for several months. Soak the foot in cold water once a day and once in two weeks put a light blister just above the hoof. This treatment will allow the heels to spread and has cured many a lame foot.

Paralysis.

Will you kindly advise me what can be done for hogs that are weak in the back legs and unable to stand?—Subscriber, Modesto.

Such conditions often follow when hogs are confined in small quarters and fed heavily. Get them out into the sunshine and give them a field to run in. For medical treatment give them tincture of juniper one pint and salicylate of soda two ounces. Mix and give each hog two teaspoons of the medicine once a day in a little feed.

Eczema.

What can I do for a high-grade Holstein heifer 20 months old that has sore legs. About two months ago we noticed both hind legs looking rough and they felt hard and leathery. Now the left leg is soft and matter and blood ooze out at the hock joint. The hair is matted with blood to the foot. She does not seem very lame, but it seems to pain her a great deal.—Subscriber, X.

Grease the parts well with lard or fried meat fat until the scabs loosen. Then with warm water, soap and a scrub brush clean the parts well. Then once a day apply a lotion made of two ounces of chloride of zinc and one gallon of water. The lotion will do more good if you warm the amount you use before applying it. Do not put the lotion in a metal dish. Warm it in an earthen or granite dish. A handful of epsom salts given internally once a day for a week will change the nature of the blood and aid the healing very much.

PIGEONS AT THE POULTRY SHOW

Pigeon raisers have a treat in store for them when they attend the poultry show at the Auditorium, San Francisco, December 8 to 13. In the fancy exhibit there will be a large showing of the beautiful crested Jacobins, Turbits, Swallows and Archangels, also imported Dragoons, Pouters, Homers, Tumblers, Fantails and Scandaroons.

The utility display will be very strong, as California is getting to eat more and more squabs each year. It is only of late years that the squab raisers went about their business in a scientific way. By the use of high-grade birds they have improved the size of the squab and the quality of the meat. The secretary of the show is E. J. Talbot, Mutual Savings Bank Building, San Francisco.

The State Beekeepers' Association is still endeavoring to put up exhibits for the expositions next year. The former committee's chairman and secretary have resigned. President Ferree is endeavoring to get action so as to put up a good exhibit at both expositions, if possible.

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The Farmer's Guide . . . Huntington, Ind. Established 1889.	80,000 Weekly
The Nebraska Farmer . . . Lincoln, Neb. Established 1859.	50,000 Weekly
Farm and Ranch . . . . Dallas, Tex. Established 1882.	90,000 Weekly
Field and Farm . . . . Denver, Colo. Established 1872.	30,000 Weekly
California Cultivator . . . Los Angeles, Cal. (Rural California merged July 1, '14) Established 1877.	21,000 Weekly
The Washington Farmer . . (Formerly The Ranch) Seattle, Wash. Established 1881.	20,000 Semi-Mo.
The Oregon Farmer . . . (Formerly Oregon Agriculturist) Portland, Oregon. Established 1891.	15,000 Semi-Mo.
The Idaho Farmer . . . . Boise, Idaho.	10,000 Monthly
Farm Engineering . . . . Springfield, Ohio. Established 1913.	75,000 Monthly

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The Lawn and Flower Garden

THE DAHLIA

Written for the California Cultivator
By Ernest Braunton.

IN all parts of California I notice the dahlia is a great favorite and is found in nearly every garden, both in city and country. At the Fresno District Fair, which I attended as judge of flowers and ornamental plants, the dahlia was especially in evidence, some of the splendid collections coming from a considerable distance, notably one from Pacific Grove. And it must be remembered that these displays were made almost in midsummer, by no means the best season for dahlias.

The reason for writing this article is to make a plea for a wider planting and a more reasonable treatment of this grand garden flower. Do not plant in early summer, or in summer proper at all. If you are situated in what is called a frostless belt and have a spot of really warm exposure, a very early planting will result in flowering the dahlia during the cool weather of early summer. The past season was ideal for this flower, for we have had an exceptionally cool summer.

Store dahlia tubers in a cool, very dry place, preferably dark, buried in deep boxes of perfectly dry sand. After the hottest days have passed plant these in the garden in a rich, loose soil, rather deeply, and water freely. After the tops are growing keep well watered and fed and "on the move" all the time. Stake and tie the tops with care, and in the cool of autumn you will have dahlias that will prove your heart's delight. These flowers are especially adapted to California soils and conditions, being native to nearby territory. A little dahlia history will assist in explaining their fitness for this clime and the necessity for "cool" treatment for autumn blooming.

The dahlia is native of Mexico, through Central America to the northern part of South America, there being about a score of wild species. The nearest relatives are coreopsis and cosmos. In their wild state dahlias grow in partial shade, sometimes in deep canyons or in the edge of forests, at an elevation of one to two thousand feet. Here, while the days are warm, the nights are always quite cool, and wild dahlias under these conditions reach their highest development. Observations of the wild species would suggest their flowering in the garden about October, and if flowered earlier they should receive a slight shading during the hottest weather.

Roses From Cuttings.

Use hardwood from size of lead pencil up to half as large again. Cut with a good sharp knife an eighth inch below a good bud. Use unbranched wood only, with several plump buds on each cutting of six or eight inches. Propagate in a shaded spot protected from wind. A box of pure sand is preferable, yet any soil will do. Make a clear hole in soil with a stick larger than cutting so the latter will not be bruised in forcing into soil. Allow but two buds or eyes to stick above soil (two eyes are enough to see with). Do not have any manure or other fertilizer in the soil. Water heavily and never allow drying out. Leave cuttings for nearly a year without disturbance. Before moving allow them to get dry through lack of water. The nearer dormant, the safer they are to move. Move with bare roots (no soil), but do not allow roots to dry, and water heavily immediately.

The Hardy Loquat.

As the years roll by each one brings to me a larger appreciation of the loquat for ornamental planting, not necessarily budded trees either, but just common seedlings such as spring up in every garden where truant seeds are dropped. In my own yard scores come up each year from seeds thrown away by children when eating the fruits, and I have yet to see a child who dislikes loquats, an additional reason for planting them extensively. It seems to make little difference how much loquats are neglected, they still thrive. In addition to budded trees I have allowed a half dozen seedlings to grow in my yard and find them easy to move at any season or any size. Being a hardy evergreen, and even the poorest growing an edible fruit, they should strongly appeal to all as good fillers for any large premises.

Commercial Floriculture.

No unattached person may so safely enter the field of commercial floriculture as one with present business or employment in ranching or gardening in the country. The latter class have means of feeling the market with comparatively small risk of serious loss, and all experiments and mistakes may be made while the business is on a small scale and in circumstances where some other closely allied business may be depended upon to retrench pecuniary losses. Necessary experience may be cheaply obtained in this way that would otherwise be dearly bought if an inexperienced person were to start raising flowers or ornamental plants to the exclusion of other phases of commercial horticulture. There is no easy road to a successful business along these lines, and the failures are many times the number of successes. In fact, nearly all eventually fail, and life successes are indeed rare.

Plants for Shade.

Just now one of the finest plants for shade is the cineraria, which comes in a great variety of metallic colors, from white to crimson and from white to purple. For general garden planting in shade in almost any range of climate the following old-time plants may be depended upon: Begonias, caladiums, centaureas, coleuses, fuchsias, forget-me-nots, lily of the valley, lobelias, pansies, phloxes and violets.

Cultivate Roses Freely.

Quite recently I was called to look at a bed of rose bushes where the plants were not thriving. I found them growing on a very gentle slope with the center of the bed higher than the sides. The soil had been well broken up but once each year for several years. The rest of the time the weeds had been hoed off. Watering had been done by sprinkling only, and a few inches below the surface where the soil should have been wettest I found it dry. Such treatment will not produce roses or even keep the bushes alive for many years, for it induces many troubles. Irrigate thoroughly by trench or basin, or both. Cultivate frequently after every irrigation, but not deeply. Merely keep the surface three or four inches loose. Roses demand no more, yet I know of no crop that is more benefited by clean culture and frequent superficial stirring of the soil.

New Zealand Veronicas.

A letter from Dr. L. H. Bailey, "on the wing," returning from New Zealand, states he became much interested in the veronicas while in their native land. It is a matter of wonder that more of them are not used in local gardens. Down at the Soldiers' Home near Santa Monica they are planted by hundreds and thrive prodigiously. At a local nursery, in sandy loam, with little water, they are growing in long rows, blooming splendidly, in four or five species. They are lowly herbaceous plants about a foot high, some higher, with fine, glistening evergreen foliage. They flower freely, usually in some shade, from white, through blue to purple, also one or more "bluish pink." All are good.

PRUNING CLIMBING ROSES FOR NEXT SEASON

After the blooming time of climbing roses is over the department's landscape gardener advises that shoots should be pruned, so as to throw the growth of the plant into the new wood that bore no flowers this year, for this is the part of the plant that will bear next year. When a trellis is low (6 or 8 feet high), it is a good plan to cut off the shoots that have borne flowers this year clear to the ground. Climbing roses are a valuable aid in making an attractive home and will repay careful treatment.

Most people in following this advice may feel that they are ruining their bushes to cut them back so severely, but the young shoots that have started about the roots will surprise them by springing up with wonderful rapidity. Each bush will probably put forth several new shoots that will grow as long as those cut, or one shoot will grow much longer. In either case the trellis will soon be covered again. One shoot in a Washington garden last year grew 20 feet after the bush had been cut down in this manner.

In the case of a high trellis a different method must be followed. The renewal of wood must begin from a point higher up instead of from the root, as the growth of a bush is not enough to replace all its top on a high trellis if required to grow so far. Only so much of the old wood should be removed after the flowers have bloomed as will enable the new shoots from the end of the remaining portion of the stalk to replace the old growth. About four feet is a safe measure of the amount that may be taken off.

Those who have grown climbing roses as a screen on their porches, in order to insure a fine bloom the coming year, will do well to follow the advice as given for the higher trellis. In other words, about four feet of the old stalks that have bloomed should be cut off immediately after the blossoms are withered. The foliage will recover within a very short period and continue to screen the porch, and next year an abundant crop of blossoms will be assured.

Economics on the Farm

CAPITALIZING THE FARM

Written for the California Cultivator
By Sacramento Valley Contributor

SEVERAL factors are required in the make-up of any successful enterprise. One of these is a business opportunity; there must be a demand for the finished product, service or whatever it is proposed to market. Another prominent factor is energy and intelligent and careful management. A third and very important factor is sufficient capital to properly carry on the business.

There is no question but that the business opportunity is present on California farms. The demand for food in the world — particularly for California's special food products—is greater than the supply. The problems of marketing may not all be worked out as satisfactorily as they will be in time, but the intelligent grower who is alert and a good salesman, has no trouble in disposing of his product.

And on many, many California farms there is no question about the energy expended or the careful management as far as details are concerned.

But on the average farm, not only in California, but all over the world, there is not sufficient money available to equip, develop and conduct the business as it should be for the maximum results and returns.

In order to be able to do all it should for its owner and for the commonwealth, every practical resource of a farm should be working to the limit of its capacity. For instance, a farm suited to alfalfa growing is not paying the revenue it should if money is not available for leveling and checking the land, sowing alfalfa and handling the crop. If water is to be had for all of it there is waste if a part is dry farmed to grain. Capital sufficient to fully develop the whole place, in addition to that already invested, would raise the percentage of revenue return from the whole property because a part of the expense of handling the place could just as well be applied to a fully developed place as one only partly in cultivation.

Then there are many farms on which alfalfa and other feeds are produced that make only a fraction of the total revenue that they could if there was money available to buy stock to feed it to.

Lack of capital renders the business opportunity of many farms—and the energy and ability of many farmers—far less fruitful of money returns than it could otherwise be.

How is all of this to be remedied?

We believe the answer is that it is being remedied, gradually but surely and steadily, as all changes take place in the great fundamental businesses of the world. There is a feeling of more confidence and interest between bankers and farmers than ever before, and there are farmers who better merit confidence than there were before farmers were better business men. There is progress everywhere; farmers do more figuring and planning and scheming, and as they do this they take the banker more into their confidence. The study of rural credits abroad is helping the whole situation, and every year more and more people are becoming convinced that farming is the best and safest business in the world.

COOPERATION IN THE NETHERLANDS

In the Netherlands there are about 100 cooperative societies for the disposal of fruit and vegetables. Only market gardeners and fruit growers can be members of these societies. The members elect a committee consisting of president, vice-president, secretary and two or four more members. An auction building is erected on a favorably situated piece of land, bought by the committee in the name of the society, and in this building the produce grown by members is sold by the committee, who are assisted by one or more officials, appointed and paid by them.

The sales are by "Dutch auction" and conducted by means of an automatic machine which consists of a big clock-like dial, round the rim of which units of Dutch currency are marked. The merchants or their representatives are seated on raised seats opposite this apparatus. Every seat has a number and communicates electrically with the dial by means of a button. Between these seats and the apparatus is a small canal wide enough to admit the poling through of a barge. Every morning the growers gather the produce ready for market, and after grading, packing and weighing, record the quantity in a book. The produce is then loaded into a barge and a workman poles it to the auction place, where he hands the book into the office. From the moment the auction starts the barges are poled through the small canal between the merchants' seats and the auction apparatus. The auctioneer announces the quantity, and samples are passed among the buyers. The pointer is then released, starting at a figure on the rim of the dial which indicates a higher price than the produce is normally worth. The pointer swings round, indicating lower and lower prices, and when the price that a merchant is prepared to give is reached, he presses the button below his seat, which checks the pointer and indicates the price at which the produce is sold. At the same time his number appears on an indicator, and as at each sale the same seats are allotted to the buyers, the work of recording the purchasers is simplified.

The amount fetched for the produce is then entered in the grower's book, and when the barge is being poled out the book is returned to the grower's representative. On his return the grower can thus see what price his produce has made in the market.

Produce is not sold on a mutual basis, each market gardener receiving exactly the amount realized by his produce, less a certain percentage which is retained by the committee to meet the necessary working expenses, and the growers' accounts are settled weekly. On the other hand previously prevailing evils such as depression of prices by buyers, underweight and bad quality, and bad grading of goods on the part of the growers, no longer occur.

All produce must be paid for before it can be taken from the society's premises, and deposits for any empties must be made to the full extent of their value.

Alongside many of the waterways are sheds erected by the society, for the use of which buyers pay a nominal rent, and in which they pack the produce to be sent to distant markets, including those of Belgium, Germany and England.

The societies in Holland lay down stringent regulations for grading and packing. If before the sale the produce is found to be not up to the standard, the controller refuses to allow it to pass through the auction until it has been regraded or repacked. If after purchase any produce is found to be not of the declared standard, the buyer has the right to refuse it; a defaulting member being fined 20 per cent of the value for which it has been sold; 10 per cent of this goes to the merchant and 10 per cent to the funds of the society.

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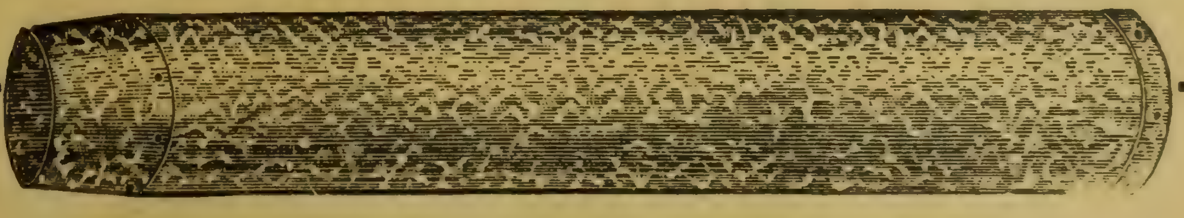

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The California Cultivator

Rural Californian combined with the California Cultivator

A Journal of Horticulture and Agriculture

By
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TEA GROWING

A daily paper asserts that tea will one day be one of California's principal products. We imagine this paper will have opportunity to revise its estimate of the worth of this crop, for we do not think labor conditions in this country will permit the establishing of any such industry. However, it is interesting to read these stories of enterprising reporters.

RAILROAD FINES,

The office of information of the department of agriculture reports fines to the extent of $25,000 collected from railroads because of violating the 28-hour law which prohibits continuous confinement of cattle for more than 28 hours without unloading, feed, water and rest. In the list of railroads fined we are glad to see that with the exception of the Northern Pacific no Pacific coast railroads were fined.

THE CITRUS STATION

It was fully expected that the matter of location of the Southern California citrus experiment station would be decided at the recent meeting of the board of regents of the state university. No decision was made, however, and from present indications there is no hope of immediate decision. This is unfortunate, for there are questions to be decided which cannot be taken up at all until the station gets down to work in its permanent home. We hope that when the decision is reached it will be right.

PHOTO CONTEST.

This is the last week of the contest for photos which will be used in the issue of November 5. Send in photographs of California farm life. Two dollars will be paid for the best, $1.00 for the second best, and six months' subscription for all others retained for future use.

It has often been the case that some member of a subscriber's family has entered this contest and not sent word as to whose name is desired to be entered on the list in case the photo is retained. Would ask all who are contesting to bear this in mind.

STATE FRUIT GROWERS

Another week the Cultivator will give liberal extracts from the program of the 45th State Fruit Growers' Convention which will be held in Los Angeles, November 10-14. The committee on arrangements has plans nearly completed and an excellent room on a quiet street assures fullest enjoyment of all the discussions. One of the most attractive features of the convention will be the sessions for women which will be held in the parlors of the Hotel Clark Miss Lilian Clark of the state university will have charge.

A fare of one and a third is assured on all railroads. Every purchaser of a ticket to Los Angeles should ask for receipt which, after endorsement by the secretary of the convention, will entitle holder to one-third fare on the return trip.

Arrangements are being made by which the proceedings will be published in book form, but the only way to get the fullest advantage of these conventions is to be present and engage in the discussions.

TURKESTAN

The department of agriculture has issued a bulletin regarding the inferiority of much of the commercial Turkestan seed which has been offered to the American market. After making comparative tests of different kinds of alfalfa seeds the conclusion is that there is nothing to recommend the Turkestan variety for general use in this country. Particularly is it undesirable in a damp climate. We think California growers have found the same trouble, for one specimen of the plant was brought to this office from a field which had lost its entire crop because of rust or leafspot. It seems to be seriously affected in a damp or cool season such as the present has been. If such is the case it is wise for alfalfa planters to insist upon having the old time, or Chilean variety, at least until more conclusive proof has been given of the adaptability of the Turkestan, Arabian and others to different conditions.

BY-PRODUCTS COMMITTEE

The fruit growers of Oregon have a committee that has been investigating as to saving some of the wastes of the fruit industry, particularly of apples of the Northwest. The committee has reported in favor of every effort being made to save these millions of dollars' worth of wastes through development of home markets and the placing of these by-products on the market in as attractive form as possible. The Northwest estimates its on-coming acreage as sufficient to ultimately produce at least 150,000 carloads of apples. This enormous output will require many hungry mouths to consume. On the other hand reference by the committee is made to the importation of canned and evaporated fruits, and it urges to greater activity every effort to claim this market instead of giving it over to the importers.

NURSERYMEN'S CONVENTION.

The California Association of Nurserymen held its fourth annual convention in San Diego last week.

The officers elected for the coming year are: F. H. Howard, president; John Vallance, T. E. Mabee, L. M. Wheeler, Thomas Jacobs, John Morley, vice presidents; H. W. Kruckeberg, secretary-treasurer; and executive committee consisting of W. V. Eberly, J. D. Meriwether and F. H. Wilson. The nominating committee recommended San Jose as the next place of meeting, but owing to the possibility of the convention uniting with that of the Pacific Coast Association the matter was referred to the executive committee with power to work in harmony with that association.

Because of space taken by reports of the dairy and creamery conventions at Modesto we are unable to give a report of the nurserymen's meeting until next week. The Cultivator's little camera was busy, and the principal part of next week's report will consist of little photographic notes of the personal side of the convention.

RURAL CALIFORNIAN.

Occasionally some subscriber of the Rural Californian who failed to observe the notice of consolidation with the California Cultivator writes to ask what has become of his old time favorite. The subscriptions to the Rural Californian have been put upon the Cultivator subscription list, or those who are subscribers to both have had their Cultivator subscriptions extended according to the credit still remaining on the books of the Rural Californian. As a rule this change has been entirely satisfactory to the subscribers of the Rural, for the reason that the Cultivator makes its visits four of five times every month instead of once as did the Rural. We trust the old Rural subscribers have noticed that we are also bringing in many of the features which were so attractive to the Rural readers. The most successful features which have been thus transferred are the contests of photographs and other features of interest to the homemaker. The next contest will be of photos, all of which should be in this office by the morning of Thursday, October 29.

LITTLE KINGDOM OF KINGS

The "Little Kingdom of Kings," which is the poetical way of describing Kings County, of which Hanford is the center, brought its products to display at its annual agricultural fair last week. It is estimated that over 20,000 people visited it. And be sure it was a for-sure agricultural fair, for Hanford is in the center of one of the richest producing sections of California. Live stock is perhaps her greatest industry, unless it is crowded somewhat by her fruits, but both these productions appeared at their best at the fair, and with her productions of great value to Kings County and all the state, there was much of pleasure.

The pavilion was the center of attraction. Displayed there were nearly all kinds of products of the soil, of course all kinds of fruits, dried, cured and fresh. The garden and the grain field sent of their products to compete with the ever-present big pumpkins. "Made in Kings County" was the legend over one of the most attractive booths and in it was a great showing of many manufactured products, and all from within the county lines. Agricultural clubs made attractive displays which aided in proving the worth of these organizations. As of old, the race track was the most attractive feature, and there were some good clean races which were richly enjoyed by the large crowd almost continually in the grandstand.

Agricultural News Notes

The trip from San Francisco to ports on the Atlantic seaboard is now made in from 20 to 24 days through the Panama canal.

County Agent Calnan of Barnes County, North Dakota, has organized the only dairy test association in that state. He has 16 herds under test.

Total receipts from all national forests throughout the country last year amounted to nearly two and a half millions of dollars, the exact figures being $2,437,710.21.

Thanksgiving week, November 24-29, is the time of Missouri's state poultry show. It will be held at Mountain Grove at the famous poultry experiment station of Missouri.

Potato growers of Wisconsin will hold their third annual conference at Grand Rapids, November 18-20. Standardization of the potato crop will be the main subject of discussion.

To establish a fixed weight or measurement on every species of fruit and vegetable boxing officials of Cuban railways are conferring with fruit growers of the Isle of Pines. This to accommodate both transportation companies and growers.

The supreme court of Pennsylvania has decided that the amount of damage collectible on growing timber set on fire through negligence is not only the value of the wood destroyed, but also the injury to the property as a whole through the destruction of the young growth.

Wisconsin has a farmers' seed growers' association known as the "Wisconsin Experiment Association," which conducts experiments on a large scale. As one instance we mention the fact that for five years 1020 members experimented with barley and 1500 members with maize.

California now ranks fifth among all the states in volume of postal savings deposits. According to a postoffice department statement there is now $3,074,347 postal savings funds on deposit in California postoffices. New York, Pennsylvania, Ohio and Illinois are the only states with larger deposits.

It is feared that New York City's free markets may be closed by cold weather. Their operation, brief though it has been, has proved most helpful. One suggestion which has been made in that the recreation piers of the city be utilized. Since these piers are covered, they could at no great additional expense be heated. An indication of the popularity of these markets is the statement of a dealer in market bags and baskets that he sold 571 of these receptacles at the market in a single day.

In this year's appropriation to the department of agriculture, congress made a clear separation of the research work of the office of farm management from the demonstration work. As a result the demonstration work has been organized into a unit distinct from the office of farm management and entitled "Farmers Cooperative Demonstrations, Northern and Western States." This new unit or office inherits all of the county agricultural agent work and all of the boys and girls' club work heretofore carried out by the section of field studies and demonstrations of the office of farm management, and in addition has taken on a third line of extension work which it designates as demonstrations in the business of farming or farm management.

Agricultural News Notes of the Pacific Coast

Northern California

The bean crop of the Sutter basin is reported the best on record.

Oroville, Butte County, has already shipped its first car of oranges.

Butte County is to have a new rice mill located either at Gridley or Biggs.

Fifty tons of honey, it is estimated, will be shipped from Chico, Butte County, this season.

It has been decided to reopen the Alvarado sugar factory in Alameda County for next season's crop.

A tract of 1400 acres in Yolo County has been taken over by a company which will grow rice upon it.

The Davis unit of the Yolo County farm bureau met October 14 to make plans for the winter's activities.

The Santa Clara Canning Company has been awarded a government contract for 10,000 cases of tomatoes.

A farm center of the proposed county farm bureau for Mendocino County was last week organized at Willits.

The fourth annual convention of the Southern California Association of Nurserymen is now being held in San Diego.

Picking of green olives will begin about the middle of November in the section about Red Bluff, Tehama County.

The Sacramento Poultry Association is mailing premium lists for its show to be held in Sacramento November 2-7.

The California State Dairy Association has called upon all dairy interests of the state to assist in the fight against the eight-hour bill.

The farmers' short courses at the university farm opened the fifth of the month with an enrollment more than double that of last year.

The agricultural club of Placerville, Eldorado County, held its first meeting of the season Saturday, October 10. Practically the entire program was devoted to the potato.

Dairymen of Humboldt County recently held a largely attended meeting at Ferndale, at which arrangements were made to carry on a campaign against the proposed eight-hour law.

The Esparto unit of the Yolo County farm bureau held an institute last Thursday and Friday. The first day was given entirely to addresses and discussion of stock feeds and management.

Horticultural Commissioner Mills of Butte County reports that during the past year over a quarter of a million nursery trees were inspected at the several depots throughout the county. He also reports that the most serious pest in the orchard this year is the red spider.

Yolo County's cow testing association has been organized something over four months and has proved of inestimable value in detecting unprofitable cows. The highest producing milker is a Holstein which produced 223.5 pounds of butterfat during the four months' period. The average cost of keeping a cow in this section is estimated at five dollars.

Central California

Dinuba is now shipping out Emperor grapes packed in drums with sawdust.

A carload of pomegranates was shipped from Lindsay, Tulare County October 1.

The Stanislaus County Poultry and Pet Stock Association is arranging for its show in December at Modesto.

The Visalia Cooperative Poultry Association is continuing the fight against importation of Chinese eggs.

A number of large shipments of honey have been made from Kerman, Fresno County, within the last week.

The mountain section of Madera County is planning an apple show to be held during the latter part of November.

Large shipments of raisins are being made from the San Joaquin Valley to eastern points by way of the Panama Canal.

There is a movement on foot to secure signatures of orange packers of Tulare County to a mutual compact to ship no immature fruit.

The output of cured figs from the San Joaquin Valley this year is estimated at between 6000 and 7000 tons as against 4500 tons last year.

Riverbank, Stanislaus County, has organized a farm center of the county farm bureau which must be organized before appointment of a farm adviser will be made.

The San Joaquin County farm bureau has decided to secure selected alfalfa seed for its members. Farm Adviser Frank E. Lyon will visit Tracy October 26, Holt October 28 and Waterloo October 30.

The pink bean growers of Soledad and Greenfield are now threshing and hauling their beans to the warehouse. The beans are of excellent quality and bringing a good price, three and one-half cents per pound.

The Tulare County Board of Trade is arranging for Tulare County's citrus exhibits at the Panama-Pacific and Panama-California expositions. One feature recently suggested is the use of kumquats for decoration.

The Tulare County Fruit Growers Association expects to pack about 125 tons of olives this season. This year the cannery will handle only ripe olives and will pack only in tins. The bottle pack will be discontinued.

Various sections of Stanislaus County are now organizing units of the farm bureau preliminary to appointment of a county farm adviser. The board of supervisors has already made an appropriation for expenses of the office.

The Tulare County Citrus Fruit Exchange has received information from Washington that the federal authorities have completed their work on determining orange standards and that the new regulations will very soon be published.

The report of Secretary Thompson of the Tulare Cow Testing Association shows a substantial gain made the past year in the production of butterfat per cow in herds belonging to members of the association. This cow testing association has been in operation for three years.

Southern California

A walnut thief at Anaheim was given six months.

The Blythe cotton gin is busy at work on this season's picking.

A chrysanthemum show is to be held at Azusa the last day of October.

A shipment of 15 tons of honey was made from Heber, Imperial County, last week.

Beaumont will hold its annual flower and apple show, Tuesday, November 3.

Date growers of the Imperial Valley will meet at the Valley experiment farm Friday, October 23.

Fifteen thousand rose plants will be set along the good roads of Los Angeles County during the coming winter.

There has been some trouble between Imperial County's board of supervisors and its horticultural commissioner.

Many honey producers are storing their honey, hoping that the European war will soon be settled and the market improved.

Bee men of the Antelope Valley, in Los Angeles County, are expecting a big crop. It will probably amount to over 100 tons.

Bruce Boyer has been appointed horticultural inspector for the Coachella Valley in place of Mr. Cawthorn, resigned.

The lima bean contest of Ventura County will be held November 7 at Ventura. This is a contest of school children of the county.

The big break in the levee, near Blythe, Riverside County, which occurred during the high water this summer, is being closed by the water company.

A Pomona fruit cannery has just disposed of 48 tons of apricot pits at $40 per ton. The kernels will be shipped to Germany for manufacture of prussic acid.

Cotton growers of Blythe, Riverside County, have formed an association to build a cotton warehouse so that they may hold their crop for better prices.

A $100,000 pre-cooling plant is about to be erected at Claremont. It is to have a capacity for handling 600 carloads of oranges and it is planned to have it ready about March 1.

The farmers' union of Arroyo Grande, San Luis Obispo County, reports the addition of 17 new members at its last meeting. It is now discussing with a commission house in Los Angeles the erection of a fruit and vegetable cannery.

Eight hundred acres in Orange County is planted to celery this season. Five hundred and fifty of this will be handled by the Orange County Celery Growers Association, which is a cooperative organization selling through the California Vegetable Union. Orange County in former years has had as much as 3000 acres planted to celery, but much of this acreage has gone to sugar beets which are contracted before planting whereas the celery takes its chances on the market.

The Coast

October 20 was apple day.

Colorado is finding some difficulty with foul brood in apiaries.

The beet sugar factory at Idaho Falls, Idaho, expects to handle about 80,000 tons of beets this season.

The 1914 fair at Willcox, Arizona, is to be held the last three days of this month. All Cochise County is boosting for it.

The live stock show at the Oregon state fair is claimed to be the finest ever. The hog and sheep shows were particularly good.

Owing to lack of funds, horticultural inspectors of eastern Washington will be compelled to discontinue part of their blight inspection work.

Government engineers have been inspecting the Palouse irrigation district in eastern Washington preliminary to renewed activity on the project.

Chicago receivers of apples shipped from the northwest are urging growers to keep at home all the rough skinned apples and ship only the very best.

The Oregon agricultural college at Corvallis is to establish a market bureau which will cooperate directly with any group of farmers in the state who wish its assistance.

In connection with the "Buy a Box of Apples" movement throughout Idaho, Oregon, Washington and Montana, it is suggested that the last week of October be named as Apple Week.

Lectures on home economics will be given at the University of Arizona at Phoenix on January 4, 5, 6. The agricultural extension service of the university will send particulars to all interested.

The annual agricultural demonstration train conducted by the railroads of Arizona and the state university will start from Phoenix November 18. The schedule of visits will be announced shortly.

At the recent meeting of the Spokane County Farmers' Union resolutions were adopted commending the successful work of the newly appointed county agriculturist and opposing the eight-hour bill.

At the request of potato growers in Idaho the secretary of agriculture is giving especial attention to the application of the net weight law to potatoes in sacks, with reference to shrinkage of weight during long shipments.

Pomologist Ramsay, in charge of fruit transportation and storage experiments for the bureau of plant industry, is strongly advising apple growers to pre-cool their fruit, stating that cold storage deadens the susceptibility of the fruit cells to bruises, as well as retarding ripening.

Conferences between cattlemen and forest supervisors are being held at Arivaca and Patagonia, Arizona, the purpose being to allot certain definite areas to each permittee, or group of permittees. By constantly returning the cattle to the range allotted them and by the use of drift fences, it is hoped they will gradually be educated to keep close to their own range.

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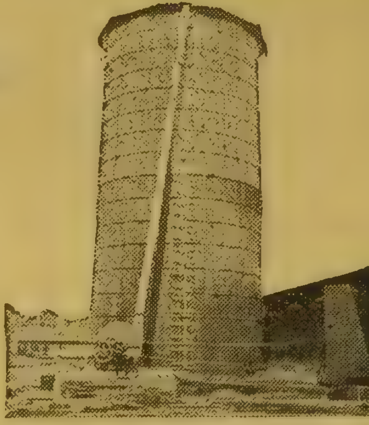

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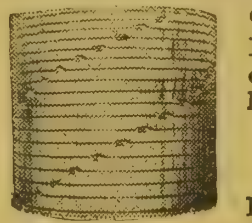

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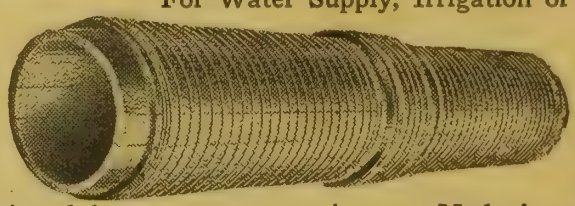

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Live Stock and Dairy

STANDARDS FOR CALIFORNIA DAIRY PRODUCTS

By L. M. Davis

Before State Dairy Convention at Modesto

HANDLING dairy products, the one goal toward which we all strive and which determines perhaps more than anything else our ultimate success is the matter of quality. Quality is the basis of our industry. It is the all controlling factor which, if attained, brings prosperity to the dairyman and creamery owner and joy and happiness to the buttermaker. On every hand, no matter what product may be concerned, it is quality we hear exploited, and certainly the value of quality is no less in dairy products than in other food products. Recognition of quality is what has developed the certified milk business and what has made the large ice cream dealers feel justified in the expense of installing modern sanitary factories. Were quality of secondary importance, we could not buy butter and cheese which is pleasant to the taste and good for the body.

When we concede these facts, it causes one to wonder all the more why such a small percentage of the butter and cheese received in our large wholesale markets will pass under the highest grade requirements. Why is it that we find so many creameries and such an abnormally large percent of our dairymen catering to an apparent second class trade! The large number of prosecutions pushed by the state dairy bureau is evidence that there is much slackness in dairy production. Not only experience, however, but facts as well, show us that the most will be realized from the dairy and creamery business when we are able to market goods of quality, and this reason is the one which challenges every person interested in the dairy industry to do his share in production of quality. It is a natural condition that we follow the path of least resistance, but in the dairy business this is almost certain to bring failure. If we succeed we must keep guiding standards in mind, and these standards must keep up with the righteous advance of civilization.

The main question which seems to concern many of our manufacturers is one of increasing their supply, but their real problem lies in improving the supply which is already theirs. A concentrated effort on the part of every manufacturer or handler of dairy products would accomplish untold results in raising the present quality of California dairy products. The grading of butter and cheese on the market is an attempt to improve our products and represents to my mind the only fair principle of buying and selling. Under the present system of grading on the San Francisco Market, for example, the impossible is not asked of the producer of cream and the manufacturer of butter. They are called upon to furnish butter of clean, fresh flavor, well made and packed. The standard for fancy cheese calls for a clean flavored product and one which is well made and of good appearance. For these high grade products the manufacturer was offered during the month of September an average premium over the next grade of two and one-half cents for both butter and cheese, ranging from one-half cent to four and one-half cents for butter, and from two cents to three cents for cheese. Under ideal market conditions a very liberal premium exists for first class products, and his premium is a recognition of quality, for it is no more fair for a creamery manufacturing butter which will score 86 to obtain the same price which 94 butter brings than it is for the prospective buyer of dairy cows to demand a Teake Lyone or a Riverside Sadie De Kol price for a scrub. In either case, the poor butter or the poor cow, there is represented an economic waste which some one must lose on.

The establishing of market grades was not only an advisable move, but a necessary one. From the standpoint of the consumer and the butter dealer it was a necessity in order that an effective incentive be offered for those goods which the best markets demand. Market grades have practically eliminated the lower quality butter in California markets, until now it is seldom that any such sales are reported, most of the butter grading probably as firsts or prime firsts. The establishment of grades was fair to the manufacturer, too, in that it offered to him a price which was determined by the quality of his product. As a matter of justice to those factories which turn out A 1 butter or cheese market grading has proven a fair method of dealing, through the discrimination made against poor goods. The man who argues most against the use of standards where they are properly and justly enforced in found in many cases to be the man who consistently supplies the market with a low grade product, and behind his argument is the weak plea of wanting the best in return for the poorest, of asking much and giving little.

In the remarks which follow I shall have in mind particularly creamery butter. What is said of this product is true in a way of others as well, especially cheese. Milk and ice cream do present a slightly different aspect, for they are products for which there is to a certain extent no market unless quality in production has been exercised. There is to be found much milk and ice cream of second grade, but probably not to extent which we find butter and cheese.

Anyone who has made a study of our butter markets is readily aware of the fact that a small percentage only of the butter received on the markets is strictly first grade. Market scorings substantiate this statement. The butter score card is the best and practically the only means we have of arriving at the market condition of butter, and it is a safe conclusion that less than 10 per cent of the butter manufactured by creameries will grade extras on a strict scoring. It is true that in using the score card personal likes and dislikes may influence a judge, still in observing the work of the educational butter scoring contest, conducted by the University farm at Davis, during the past five years, as well as the routine scoring of butter on the market, which work has involved roughly the detailed scoring of perhaps a thousand samples, I am convinced that in 99 cases out of 100 a score conscientiously placed by a butter judge will be a fair representation of what the butter is really worth. My experience, however, does not show me that such a statement would be generally accepted by all creamerymen. Some creamerymen get very unreasonable when their butter scores less than 92 or 93 points. My poor ability at scoring butter has been pointed out to my superiors. I have been called up by long distance telephone to listen to profane language and have received telegrams bearing evidence of having been hastily sent from creamerymen, telling me that the person who would score the butter sent by them less than 94 points knew nothing about butter or anything else, no matter whether such person happened to be a federal dairyman, an official market butter inspector or what not. At the recent state fair one buttermaker became very much perturbed and wrathy over the fact that his butter scored only 91, and complimented the judges somewhat in the manner above mentioned, in spite of the fact that he churns only cream which is shipped and in a plant which is far from being an ideal place to handle any food product. As a matter of fact another buttermaker who overheard this man's emphatic denunciation of the butter scoring stated afterward that he failed to see how good butter could be made in such a factory as the one in question if the buttermaker were given the best grade of sweet cream to work with. It is extremely unfortunate when a person reaches that stage of advancement which rebels openly at unfavorable criticism. Our sympathy goes out for the poor fellow who actually believes that he has reached the point where his performances can not be marred by such disagreeable things. One thing is impossible—"A man can never push himself forward by patting himself on the back."

In justice to some buttermakers whose product is below par, but who insist that it is of highest grade, it is only right to mention what I consider one of the causes of poor quality and which has challenged the fairness of California market standards. I refer to paying highest prices for undergrade goods, a practice which we know exists at certain times of the year at least. One of the arguments put up by a creameryman who objected strenuously to the score given his contest butter was that he had been getting top market quotations right along, although his contest butter had consistently scored not higher than 91. Some one was wrong, either the butter judge who scored the contest butter or the commission man who scored the market butter. If butter will score only 91 under the market standard it is unfair to the creamery business in general that the price of 93 point butter be offered for it. This matter of competition, and, too, that of supply and demand enters in, but I am certain that were the butter markets to grade more closely, a more determined effort would be made by the creameries to improve their product.

In the great struggle for existence which the creameries of California have and are experiencing, quality has suffered. Who is to blame? The whole proposition hinges upon what has just been said, for it is apparent that were butter paid for according to its quality some creameries would have to do a vast amount of improvement or they would succumb. This then is one of our problems. Competition in the creamery business itself is also to blame. We have found that when the question of improving the cream supply is taken up with some creamery patrons they immediately quit sending their cream to us. Some other creamery gets it, and our acquaintance with such dairymen leads us to believe that whoever gets their cream receives it in no better condition than we did. There are creameries in existence which cater to this class of dairymen. They stand ready and willing to take anything at all times. They have as a rule a wonderful buttermaker who is able to take cream which is delivered once every week and testing 0.6 per cent acidity and handle it in such a way that the butter therefrom is purity personified. We can find such creameries advertising their product under glowing terms, and the worst of it all is that some people believe it and decide if such butter is perfect they will go without or take oleo. There should be some regulation whereby a creamery, not only the building, but the buttermaker as well, should attain a certain standard or should be prohibited from advertising his creamery's product for more than it really is.

Dairymen themselves are partly to blame. Recently a state dairy inspector stated that anybody could start a cream station in a certain California town and make money for about a week, then his business would stop. The dairymen in that vicinity are continually looking around for a new buyer. They have no interest in any creamery. They have no interest in producing a good grade of cream. All they have any desire to produce is butterfat, and it sometimes seems that our creameries assume this attitude also. There is no doubt but that we all want butterfat, and further that we all want good flavored butterfat, but too many are afraid to emphasize the latter. There is nothing truer than this, that the successful production of good dairy products and the maintainence of our standards means and requires cooperation from producer to consumer. The lack of cooperation is one thing which is helping to break down our standards.

The consumer, upon whom the butter dealer, the creameries and the dairymen are actually depending, is becoming more and more active in dictating to the dairy interests under what conditions they may operate their business. Ignoring the efforts of those tireless workers who have no business of their own to attend to and who have to tend to that of other people, there is some reason perhaps for this spirit of unrest. Do you blame the man who pays half a dollar for a pound of butter for wanting good butter, or the housewife who pays ten to twelve cents per quart for milk for wanting good milk? The consumer can rightly lay claim to his money's worth. On the other hand, however, he must be willing to help pay to keep up the standards. It costs money to produce the best grades of milk or butter, and certainly the person who must pay this premium is the consumer. It is a matter of some interest that there is such a general sentiment against an increased price for dairy products. People will accept an increased price for most any other food product with apparently less complaint. If the producer cannot obtain the price which is necessary for a high grade product, we have admitted another factor which tends to spoil our standards. The consumer frequently argues that present prices are such that the producer is realizing a reasonable profit, for which reason he does not feel justified in consenting to an increase in retail prices, and that if producers will not raise their standards he will resort to legislation to bring about the improvement he seeks. Let us hope that a condition like unto this will not be realized, but let the possibility of its existence prompt the dairymen and creamerymen to action in bringing into effect those methods which the production of any food product deserves. Careless practice on the part of dairymen is bound to favor the adoption of burdensome regulations. Dairy inspectors nowadays are too unwelcome on most dairies. They should be regarded not as policemen, but as advisors. Even were those dairymen who have been or who ought to be prosecuted under the dairy law to follow their own convictions, I venture that the life of the California dairy inspector would be more pleasant. So long as the dairy inspector has to spend some of his time in court, the standards of our dairy products are in danger.

That California standards are imperiled is illustrated by the recent action of the Los Angeles Exchange, where the requirements for highest grade were lowered. To the outsider this is an indication of a step backward. Shall we admit defeat in our effort to make California one of the leading dairy states of the Union? We must have quantity, but along with this let there be quality, that factor which will do most to make for California's dairy industry the same enviable name which her fruit industry boasts. We cannot expect this until we individually assume our responsibilities, maintain a lasting interest in our products, and at least approach some degree of cooperation. Nothing can be more ruinous to our industry than the manufacture and marketing of low grade products. It is the fancy goods which bring the fancy price and create profitable lines of trade.

MODESTO DAIRY SHOW

(Continued from Page 387.)

quality, for it affects the producer seriously in his pocketbook.

Cooperation

It is gratifying to note how strongly the idea and the spirit of cooperation are getting hold of dairying and dairymen. A decade or two ago the cooperative creamery spread over the state; many plants were erected—by promoters chiefly—and many failed because they were badly located or badly organized. Then the pendulum swung toward the private creamery and to the big centralized concern. But now the cooperative idea has been worked out on a sane and sound basis, and has so well succeeded in a few instances as to serve as an excellent object lesson for all dairy localities. An important phase of the situation is that a group of cooperative creameries combine to have their own selling agent in their chief market city. Thus a group of cooperative creameries in southern San Joaquin valley have a selling agent in Los Angeles. A group consisting of a new creamery at Ferndale, a new one at Petaluma and one

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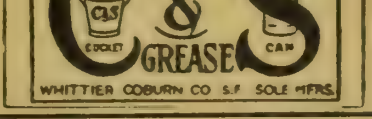

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in course of erection at Point Reyes, have a selling agent in San Francisco. Thus the man who owns the cow has his finger on his product until it passes into the hand of the retailer, who stands next to the consumer. Surely it is a wise and righteous condition.

Exhibits

Modesto has set the pace, and when these conventions meet again in a dairy center, we will expect to see an effort to excel the 1914 exhibit. But any locality must go some to beat a Modesto dairy cow show, even though pavilion exhibits may be increased. A notable display in the auditorium is by the United States postoffice of the parcel post facilities. The exhibit was arranged by Wade H. Howell, postmaster of Modesto, and is a part of the general movement of the United States postal department to acquaint the public with how to use the mails for shipping. Some 200 different packages or containers were shown, as well as articles that may be sent by mail. These include silk dresses, auto tires, fresh and dried fruit, butter, cheese milk cans, vegetables, figs, medicine in glass bottles, bundles of lath, small trunks, etc., etc. An educative feature was in the container showing the right and wrong way of doing up packages.

The greatest interest was shown in the dairy cow exhibit, where about 70 head of registered cattle were shown, mainly by Modesto breeders. State prize winners were there, for Modesto has long been carrying away honors from Sacramento. The exhibitors were:

Jerseys—Guy H. Miller, Fred B. Wulff, J. M. Bomberger, Rancho Dos Rios, D. F. Conant, C. D. Haworth, T. W. Cheney, W. W. Fish.

Holsteins—J W. Bensit, H. B. Cowan, H. E. Cornwell, Luther Thompson, G. W. Barber, Arthur Kendall, Mr. Palander.

Dutch Belted—U. G. Strader.

The awards of the judge, Professor True, came too late to incorporate in this week's account, but will appear next week.

A Jersey Sale

As a sort of prelude to the convention and dairy show was the sale of W. W. Fish of Davis, Yolo County. Mr. Fish not long ago bought several good animals in the east to stock his ranch at Davis, but he was obliged to change his plans and placed his cattle at auction. The sale was a good one, as the appended list shows:

To J. B. Fakes, Rosette, Anna K., Noble's Nugget, Noble's Princess, Lillian, Louisa Hugo, calf (heifer), Teddy's Ruby, Noble's Warder. To J. De La Meter, Fox s Chata, Jolly's Teddy Pogis. To P. M. Lansdale, Lucy Queen, Kate Cheatham. To S. F. Williams, G. Lucy (calf). To J. M. Bomberger, Noble's G. Laddie. To D. F. Conant, Dinah, Hazel, Lady Turbigo. To F. L. Weston, Dinah's Norah, Lois, Louisa Ruby J, Helen's Pink. To R. E. Watson, bull calf. To Fred B. Wulff, two heifer calves. To O. C. Blessing, Pansy, Noble's Paula. To H. D. Coolidge, Paul Warder. To J. E. Lewis, Paula's G. Maid. To M. E. Kerr, Helen of Valley View. To M. L. Garber, bull calf.

FEEDERS

The Cultivator has had several requests for information as to where feeders could be purchased, to be brought to California and fed upon our surplus alfalfa. We have written to Mr. M. E. Bemis, editor of the Southwestern Stockman & Farmer, at Phoenix, who replies:

"Cattle are being shipped out right along now. About 1000 cars will be shipped from two points, one in the northern and one in the southern part of the state, during the present month, so I am informed. It is my impression that a buyer should be on the ground to buy to good advantage. Most buyers make contracts for future delivery some time in advance of the rodeo. I am of the opinion that most of the cattle for fall delivery have already been contracted."

In addition, Mr. Bemis sends us a list of live stock inspectors of Arizona, copy of which will be mailed to any subscriber of the Cultivator who may request it. Doubtless these inspectors are in close touch with live stock conditions in that state.

THE GUERNSEY BREEDERS' ROUND-UP

Thursday, October 29, is the day set as Guernsey Day at the National Dairy Show at Chicago.

The Guernseys will be judged in show ring during the day, and all breeders should make an effort to be there.

In the evening will be held the Guernsey breeders' banquet and general meeting.

The importance of the National Dairy Show has been growing and each year marks more forcibly its usefulness in the advancement of the dairy industry.

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Poultry for Profit

WHY PURE BREDS?

Written for the California Cultivator
By Jean A. Koethen.

THE young man who delivers my groceries stopped on the back step the other day to ask if I had a Buff Orpington cockerel for sale. Further conversation developed the fact that he had no Orpington hens, but was thinking of mating the Orpington to some Rhode Island Red hens he happened to have. "Why don't you get a Rhode Island Red cockerel?" I asked, and he had no reason to give save that he "liked Orpingtons better."

That is exactly the attitude of many people who "keep chickens." Some one recommends Rhode Island Reds, and they at once try a setting of Red eggs. Another neighbor says there's nothing so good as White Rocks, and forthwith some White Rock chicks are bought or hatched and turned out with the Reds. An opportunity comes to buy a few Leghorn hens cheap, and our friend, who always has liked Leghorns, mixes them with his Red-Rock aggregation.

The situation would not be so bad if the breeds were kept separate, and all of one breed, but the chances are, on such a farm, that the best cockerel is mated to all the hens, regardless. Indeed, I have seen cocks of two different breeds running with as many breeds of hens, and all different. From such breeding as that you get "just chickens and such chickens."

The reasons against this practice have been given so many times and in so many places that it seems childish to mention them, but I am going to try just this once to sum them all up.

My first reason for preferring pure bred fowls is one that most people would put last, but I consider it a very good one. It is the aesthetic reason, just "looks." A pure bred flock, be it Leghorns, Orpingtons, Barred Rocks, or any other breed, is a beautiful sight, a sight to make any passer who cares at all for chickens look and look again. It is a pleasure to care for such a flock, and a pleasure to hear them praised.

Beauty is its own excuse for being. That's a truism. It is also the plain, unvarnished truth. It is said, I don't know how truly, that one reason so many young people leave the farm is that they want beauty—pretty green yards, attractive homes, and all the rest. Perhaps a flock of beautiful pure bred fowls, well housed in shady runs would not add much to the sum of beauty on our farms, but it would add something, and give pleasure to the whole family.

A flock of mongrels on the other hand is not beautiful, nor is it even interesting. There is no chance for breeding up, no possibility of producing one fine fowl of any breed. They are "just chickens," that's all.

My second reason is one that will appeal to every one. Scrubs are not as profitable as pure bred fowls. Professor H. C. Pierce, of the United States department of agriculture, says:

"I am pretty well acquainted with the poultry conditions in the country, particularly in the southern states, and I do not know of a single instance where a man has made a success of the poultry business to any great degree where he has used common stuff or mongrels. I would just as soon go bear hunting with a bird dog as to go into the poultry business with common, mongrel stock.

"In addition to furnishing produce for a Baltimore house, we were on one occasion furnishing fresh eggs daily, receiving ten cents above the market price, but the demand grew so great during the hatching season that we were compelled to put in some common eggs to help supply this egg trade, but we found a very small per cent of the eggs from common fowls were fit to sell as first class eggs. We did not get the same value for our feed. There is no mongrel, or common, chicken that will compare with egg-producing breeds, because these breeds have been bred for centuries for egg production, and you can get more dozens of eggs from them."

At the Cornell experiment station experiments were made in crossing White Leghorns with Barred Rocks, and it was found that the offspring, while they were larger than Leghorns, were smaller than Rocks, and not so good as either. Professor Rice says:

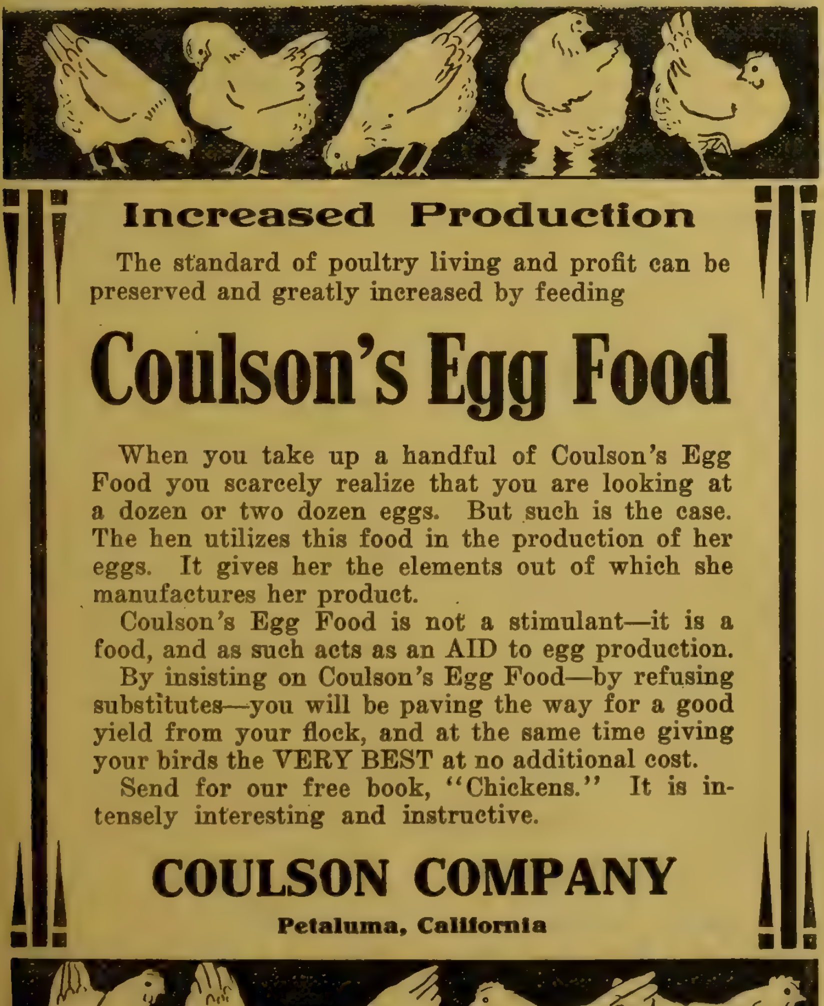
"We gained nothing in constitutional vigor, egg production or meat production over the pure breds, but we did do this, namely, by bringing together two magnificent pure bred varieties which have taken somebody from fifty and sixty years to develop, we have in one season undone the careful breeding of half a century. Just what would take place in a cross of fowls that are more closely related in type, such as the Plymouth Rock and Rhode Island Red or Wyandotte, yet remains to be seen, but I think we are hewing pretty close to the line when we use only pure breds to get uniformity in type of fowl and quality of eggs, hatching quality, feeding quality and beauty in appearance."

An experiment of my own this spring in crossing a Buttercup male with Buff Orpington females had similar results. The offspring grew more rapidly than the Buttercup chicks in the same brood, but less rapidly than pure bred Orpingtons, and it is hard to see what gain there could be from such crossing, unless it were in egg production, and I have no chance to test that as yet.

The worst result of crossing lies in what follows in the second hybrid generation. The first generation may be fairly uniform and have some good qualities, but the second "goes to pieces" and you get everything and anything. Gregory Mendel, the Augustin monk, whose discoveries, based on many years' experiments with the common garden pea, have made an epoch in the study of heredity, found that the first generation of crosses follows the dominant parent (though it is impossible to tell which is the dominant parent in any particular except by results), but that mating together members of this first generation invariably produced four different groups in which appear various likenesses to remote ancestors, so that no one can tell anything about what will come of such a mating. In this way the work of years in establishing certain color or type characteristics is undone.

This does not apply to the work of skilled breeders who sometimes in establishing a new breed make crosses in order to add certain valuable qualities. In these cases the cross is made, and the first hybrid generation bred back to the original parents, thus keeping close to that type, but varying where variation is desirable. Professor Dryden, of the Oregon station, in order to build up a breed which should be heavier than the Leghorn and a better layer than the Plymouth Rock, made a single Leghorn-Rock cross, and then mated back to the Leghorn parent, so that his famous 300-egg hen has seven-eighths Leghorn blood and one-eighth Rock blood, and the layer in the same pen of sisters, which almost equalled this record, has three-fourths Leghorn blood and one-fourth Rock blood. These hens are as white as pure bred Leghorns, but have more of the Rock shape.

This shows what science can do, but most of us are not scientists, and the best we can do is to use the magnificent breeds we already have and be thankful we have them.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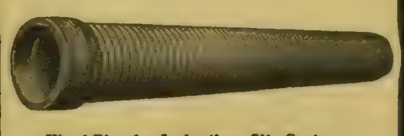
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Questions and Answers

THE EDITOR AND STAFF

Questions to be answered in this department should be received at this office one week before reply is expected. Write plainly on one side of the paper and sign full name and address. Unsigned communications receive no attention.

Leag Weakness

What is trouble with hens that cannot walk?—Subscriber, Modesto.

Leg weakness in grown birds is usually due to upset digestion, the result of overfeeding or of feeding too fattening foods, combined with too little exercise. Sometimes the pressure of an unlaid egg on the nerves of the pelvic region causes temporary paralysis. Sometimes, when hens are very fat and exercise very little, the weight of the body makes walking difficult. It is impossible to say what is the matter with these hens without knowing a little more about their symptoms and the rations they are on, but the chances are they are overfat. Cut corn and corn meal out of the ration, add more bran to the mash and see that they have about 15 pounds of fine bone meal to 200 pounds of dry mash. Give more alfalfa and other greens, and above all make them work. Let them scratch for all their grain, and if they can be given free range for a while with just a feed of wheat and oats or barley at night, so much the better. Sometimes rheumatism makes a hen so stiff and lame that she does not care to walk, but rheumatism is always due to dampness, and only extreme carelessness about standing water in houses and runs could cause it in a dry season. The only cure for rheumatism is removal of the cause.—J. A. K.

Rabbit Questions

Please tell a subscriber what kind of rabbits are being raised for the Los Angeles market? How are they sold, by the piece or pound, and is the skin of any value? Where can one obtain information on the subject of raising rabbits, houses, feed and care?—Subscriber, Riverside.

Chiefly Belgians, New Zealands and Flemish Giants. They are usually sold by the piece, though sometimes by the pound. The skins are purchased by a few business houses on this coast, one in San Francisco handling and advertising for a considerable number last year. When in condition and tanned properly their skins are very handsome.

One can obtain information on the subject of housing, feeding and care of rabbits by consulting any experienced rabbit fancier, or securing literature from any house handling poultry supplies. (We may add that there is a book by Townsend, "Practical Rabbit Keeping," printed at $1.25, but practical rabbit people of California say that as it is written from an English standpoint it has little real value for the Californian. A little 25c book, "The Belgian Hare Guide," which can be supplied by the Cultivator, or with the Cultivator for one year at $1.15, has been declared by some rabbit breeders to have a greater fund of information for Californians.—Editor.)

Many in Southern California are doing well with their rabbits as they always find a ready sale at a profitable figure during the winter months, due no doubt, to the present high cost of beef.—R. V. M.

Drooping Ears.

I have some young rabbits whose ears droop down, some one and some both. What is the cause? Can you give me information what to do for them?—Subscriber, Selma.

The cause of this serious defect in rabbits has never been established and comes occasionally with the most careful breeding. In exhibitions, a rabbit with one or both of its ears drooping is disqualified by the judge, as standard requirements demand, and such specimens should never be placed in the showroom. It is not even considered a wise policy to breed from a specimen so affected, as many rabbit breeders are firm in the belief that they have a tendency to reproduce this defect in many of their offspring. Hot or extremely warm weather will often cause drooping ears in rabbits and when once down badly they are not likely to recover. Inbreeding improperly is said to be another cause, and some people believe it is through improper feeding. However, whatever the cause is, authorities do not offer a solution, and as to a cure for it, there is no reliable method of prevention.—R. V. M.

Sorrel in Lawns.

How do you handle sorrel which is such a pest in lawns of blue grass, lippia and even devil grass? We have been told that lime will correct condition of the soil so it will not bother, but this does not seem to work out in practice.—Subscriber.

There must be something wrong with the lime or its application, or quantity used, for it does "work out in practice." I know of one lawn where the sorrel grew thickly over the surface and little grass could be seen. A liberal application of airslaked lime was given, and all sorrel quickly disappeared. It is well to know that a certain amount of soil acidity is necessary to the life of sorrel, and when this is neutralized by the lime the sorrel dies. Extreme acidity would demand a liberal amount of lime; at the rate of a ton to the half-acre, perhaps; certainly not more, or some other defect is indicated. Lack of even ordinary drainage or the presence of hardpan close to the surface may prove a fatal defect, and if liming does not correct the acidity the lawn should be made over, spading deeply, and all sorrel will disappear.—E. B.

Preserving Citron.

How is commercial citron preserved?—Subscriber, Soledad.

The fruit is cut from the tree, halved, and covered with brine. This may be for a period of a few weeks or for a few months. In shipping the fruit from trees in the Mediterranean country to processing works the usual method is to ship in large tanks filled with ordinary sea water. Later the pulp is scooped out and, after removal of the excess salt by immersing in fresh running water, the fruit is placed in a weak syrup, the strength of which is increased from time to time until ultimately a saturated solution of sugar is used. The fruit is then dried and marketed. There are a number of citron trees in California, but we do not think the processing of this fruit will prove of great commercial importance to this country. For home use orange and lemon rinds are often parboiled, then immersed in syrup and dried. Also for home use the citron melon makes a fair substitute.

Italian Prunes.

Do Italian prunes make a better dried prune than the French, and would you advise planting them in preference to the French prune?—Subscriber, Beaumont.

There has been no prune tested in California which has equaled the common French prune, prune d'Agen, in commercial importance.

Stallion Registration.

Is it necessary to register a stallion in California, and to whom should one apply for registration?—Subscriber.

The California registration law was passed and approved May 1, 1911. It specifies that every owner of a stallion which is offered for public service shall file full information regarding the animal with the California stallion registration board, of which A. L. Scott, Sacramento, is president. Would suggest you write Mr. Scott for full information.

Concrete for Olive Vats.

I notice in the olive pickling article recommendation of the use of cement troughs. Have these vats of cement been found successful?—Subscriber, Dehesa.

Concrete is used by practically all the larger pickling works in California and has been found entirely successful and not affected by the lye solution. The life of a well-built redwood vat is about 12 to 15 years; the concrete vat is almost everlasting.

Pear on Quince.

Can a Bartlett pear be grafted on quince, and what is the best time to do it?—Subscriber, Santa Barbara.

Where a dwarf tree is desired quince is used, and the Bartlett is one of the first recommended as doing well on quince stock. In fact, where blight is bad the Angier quince has been advocated as a means of keeping sound root. However, the commercial orchards of this state are almost entirely grafted on French pear sets. December or early January is the usual time for grafting. California conditions are such, however, that considerable latitude is possible.

Transplanting Cactus.

How about transplanting cactus two or three years old? What is the best time?—Subscriber, Modesto.

July and August are probably the best months for resetting cactus, and the fact that it is two or three years old would not be a serious objection, especially if one removed many of the leaves or slabs for resetting. If fresh slabs are removed and put in at this time of the year the rains are liable to cause them to rot.

Morning Glory.

I have a small piece of ground infested with wild morning glory. Have tried every way I know of to get rid of it, but without success. Can you give me any information regarding it?—Subscriber, Nestor.

The morning glory pest is a serious one and probably the best remedy of all is through cultivation every Monday morning before any other job of the week is taken up. A few weeks of this thorough cultivation will discourage the plant for want of breath and it will die out; but bear in mind that it must never be allowed to show green leaves above the surface. In cultivating the various patches be sure that bits of roots are not dragged from the infested section to clean land. Remove all broken pieces before passing from one patch to another. Efforts have been made to smother it by covering deeply with straw or manure. Some have applied salt a couple of inches deep over the patches. This latter method is effective, but of course poisons the land for a period of years for all other crops. On large ranches the poisoned land has been considered less of a detriment than the maintaining of a pest to destroy other sections of land, but with high-priced land which is intensively cultivated the best plan is to use the weed cutter on the cultivator.

Gum Trees Near Line.

Can a neighbor compel me to take up trees which are one and a half feet from line? The trees are four years old. They were planted for a windbreak.—Subscriber, Lomita.

Any one may maintain trees on his own land as he pleases, but if there is damage to neighboring property the owner of the property, after proving the damage, may collect it. We do not believe this has been tried in California, however, and it might be a difficult matter for the owner of neighboring property to make proof as to the real damage caused. Of course, if the branches or roots reach over the adjoining property the owner of it is justified in removing them.

Fleas on Cat and Rabbit.

How can I rid cats and Belgian hares of fleas?—Subscriber.

You may wash the cat in a lukewarm solution of soapsuds to which a tablespoon of household ammonia has been added for each gallon of water. Be careful this does not get in the cat's eyes. Or wrap the animal in a cloth and rub buhach into the fur next the skin. This will deaden the fleas and they will drop onto the cloth, when they may be burned. Cat fanciers control this pest by the use of a fine comb. With rabbits; keep the hutches thoroughly clean, removing collections of dust, which form breeding places for insects, and dust with buhach.

Moldy Corn for Poultry.

Do you think that white corn that heated in the sack, but as soon as discovered was emptied and thoroughly dried, would injure chickens? —Subscriber, Tulare.

Corn that has once commenced to mold will never be fit for feed again. Drying does not kill the mold germs, and these, when taken into the digestive organs of a fowl, grow and multiply in the tissues and cause very serious trouble. It is possible, of course, that adult fowls might eat this corn and not suffer, but there is always danger.—J. A. K.

Grafting Walnuts.

I have a nine-year-old walnut grove of ten acres in which there are trees that bear bad nuts (some ten per cent of trees). Please advise me fully as to grafting these trees and what kind of trees it is most desirable to cut scions from and at what season. Our La Habra Association wants only Placentia Perfection nuts. My trees are budded but the shells are rough and nuts don't sell well. The soil in my orchard is a heavy sediment loam, gradually growing lighter in color as we dig down. Would you advise a light dynamiting of this ground?

Some of your trees are evidently seedlings and being only nine years old will not be too large to top graft profitably. By marking these now in some way so as to distinguish the unprofitable trees, the branches can be cut where they are not more than three inches in diameter, February next, and two or three scions placed in each branch. Usually a well balanced tree can be made by using from 6 to 10 branches. The other branches should be cut off close to the trunk and the scar painted over with some metallic paint or a heavy asphaltum paint. If you want Placentia Perfection nuts, select your best producing Placentia tree from which to cut scions. These may be cut just as needed, or may be cut earlier if they are kept in damp sawdust or in damp sand, but be sure they are kept damp and are never in a wet mass. There will be no advantage in using dynamite in the soil you describe, but the liberal use of strawy manure and cover crops deeply plowed under will be very beneficial.—J. B. N.

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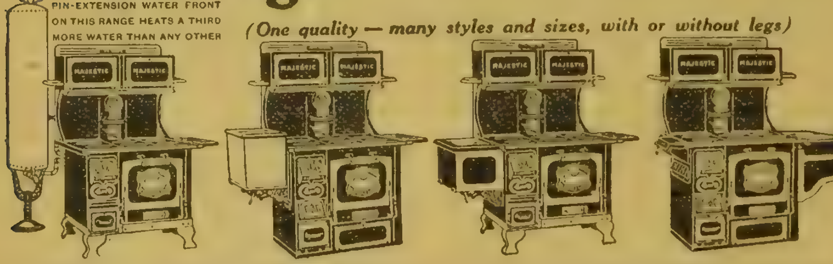
[The 15 gallon all copper reservoir heats water as quickly as a kettle on a stove top; oven door lowers onto heavy braces; oven rack stays level, under load, when pulled out. Reservoirs flush with stove top have aluminum lids.]

The cost of a Majestic, in **service**, is less than that of any ordinary range. The fuel, repairs and work it saves and the **years** longer that it lasts, more than offset its little extra cost.

If you realized how much the Majestic reduces the work and worry of cooking, you would get one now. Find out! If you don't know the Majestic dealer near you, ask us. (There is one in every county of 40 States). Write for "Range Comparison" explaining the many Majestic points of superiority.

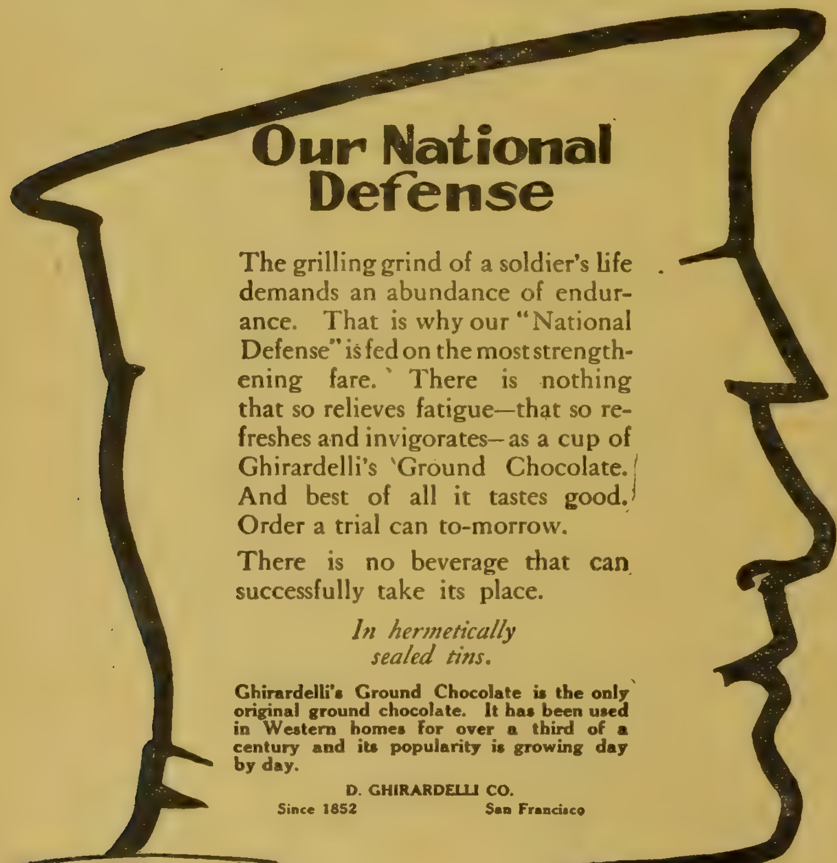
Majestic Mfg. Co., Dept. 203 St. Louis, Mo.

Great Majestic
Malleable and Charcoal Iron
Range



PIN-EXTENSION WATER FRONT ON THIS RANGE HEATS A THIRD MORE WATER THAN ANY OTHER

(One quality — many styles and sizes, with or without legs)



Our National Defense

The grilling grind of a soldier's life demands an abundance of endurance. That is why our "National Defense" is fed on the most strengthening fare. There is nothing that so relieves fatigue—that so refreshes and invigorates—as a cup of Ghirardelli's Ground Chocolate. And best of all it tastes good. Order a trial can to-morrow.

There is no beverage that can successfully take its place.

In hermetically sealed tins.

Ghirardelli's Ground Chocolate is the only original ground chocolate. It has been used in Western homes for over a third of a century and its popularity is growing day by day.

D. GHIRARDELLI CO.
Since 1852 San Francisco

The European war will not increase our price during 1914.

GHIRARDELLI'S GROUND CHOCOLATE

The Household Department

WHEN TROUBLE COME ROUND

When Trouble knocks hard on my kitchen door,
I don't git up an' answer no more;
I set right still till his han's git sore.

Years ago when I was young an' thin,
I uster git up an' ask him in,
An' listen to all the yarns he'd spin.

An' I'd think all day, an' I'd dream all night,
Till I didn't hev no appetite,
An' I couldn't work an' I couldn't fight.

Then I woke one day with an awful start,
With a change of head an' a change of heart,
An' I laid fer Trouble to play my part.

When he come along an' he saw my eye,
He turned 'way out fer to pass me by;
An' I held my head up bold an' high.

So now when he knocks at my kitchen door,
I git my club an' I cross the floor;
But Trouble don't hang aroun no mor.e
"Century".

IN SPITE OF MAGIC

A Story For All-hallow Eve

By Lillian Wentz

YOUNG CORNELIUS BABCOCK settled his neckties and thrust in its crimson folds his turquoise scarfpin. Then he stood away and admired the snowy whiteness of the rubber collar that looked exactly like linen and saved many a laundry bill by its deceptive use; he stroked the glossy smoothness of his olive green striped suit; he stuck out a neat foot attired in a pale blue sock and shiny patent leather pump and smiled with satisfaction. It would be a critical maiden, indeed, who would not look with favor upon Mr. Babcock in this festal array, for he had health and youth and a measure of good looks. He was going to a party, and he was in love. It showed in his face and in his eyes.

Suddenly he reached into an obscure corner of the bureau drawer and drew forth a tiny box. From this box there issued a small gold ring, set with a cheap red stone. Cornelius gazed on it with quickened breath. He had planned to wear it on his little finger that night. She would ask him about it, and he would ask her to wear it if she wanted to. It all seemed so simple as he had planned it, and now he scarcely dared place it on his hand. Suddenly it found place on his finger, and the stone flashed as he lifted a hand and turned out the gas.

As he strode through the dining room, where the elder Cornelius sat reading the evening paper, his mother's voice halted his steps.

"Where you going, Corny? My, but you're dressed up!" She beamed at him over her spectacles.

His father lifted a shaggy gray head and surveyed his son with apparent scorn. "What you rigged like a nigger minstrel for?" he growled ontemptuously.

Cornelius writhed inwardly. His face flushed, and he stammered con fusedly. "I'm going to a party. I guess I won't be home till late. Mary Finn's giving a Halloween party."

The Finns lived in upper New York, and on this particular night their small flat was filled to overflowing with a merry company of young people.

All sorts of paper decorations hung from the walls and chandeliers. Jack-o'-lanterns were suspended in the doorways and swayed grinningly as tall heads passed to and fro. In a circle of laughing young men and girls Mary Finn was outlining her program for the evening's fun.

"We'll tell fortunes by melting lead and dropping it in cold water, and we can roast chestnuts on the gas stove. There's a tub of water and apples to duck for in the kitchen, and afterward you peel the apples and throw the paring over your shoulder. It curls into the initial of the one you're going to marry! It does" Mary blushed charmingly, and Cornelius intercepted her smile and took it to himself.

"And what else,Mary?" A broad shouldered young man with a shock of thick, dark hair moved forward and obstructed Cornelius' view of Mary Finn.

"It's for us girls to do," giggled Mary. "We let down our hair at midnight and take a lighted candle and a handglass and walk backward around the house three times. Only this being a flat we'll have to walk up and down the hall, I guess. If you're ever going to get married, you'll see the face of your future husband in the glass."

"Do you believe that, Mary?" asked a thin faced girl sharply. "You seem to take it like it was dead earnest, but"—

"Ask my mother," returned Mary proudly, and genial Mrs. Finn nodded complacently.

"It's true, ain't it Michael?" she asked of Mr. Finn, who murmured assent. "I saw Mike as plain as could be looking over my shoulder, and I married him, didn't I? Don't be so skeptical, Kitty; it ain't healthy. Keep young and foolish as long as you can."

The thin faced Kitty smiled politely and sat down near Cornelius. "Things don't come like that do they?" she asked him. "I mean the things you want to happen don't come so easy. You have to work to make 'em come right.'"

"I—I don't know. I never thought much about it," admitted Cornelius, conscious that he had been wildly hoping that some reflection of his face might be projected upon Mary Finn's mirror.

"Hump!" ejaculated Kitty scornfully as she moved away.

It was a delightful evening. There were much fun and merriment over the fortune telling and the apple ducking. Cornelius was lifted to heights of bliss when Mary's paring dropped over her shoulder and formed a distinct B—for Babcock, of course. But he was plunged to the lowest depths when he learned that the broad shouldered young man's name was Brady—Christopher Brady—so he stood an equal chance with Cornelius.

(Continued next week)

DIDN'T LIKE DOGS

Hobson—Are you in favor of that curfew law? Dobson—Yes. I'm in favor of any law that reduces the number of dogs.—Judge.

One of Our Houses

You Can Build Your Own Home Easily, Quickly and Economically

Not a portable but a permanent, substantial and attractive home.

We furnish the lumber, trim, windows, doors, cut and numbered to fit our plans. You follow the plans with your hammer.

No building experience necessary. All hardware, nails, paint, stain, plaster or interior wall-board furnished with plans.

Your own ideas carried out. Satisfaction guaranteed. Catalogue of plans. Send for it today.

READY BUILT HOUSE COMPANY
974 Broadway Portland, Ore.

IDEAS FOR THE COOK

Written for the California Cultivator
by Isabel Cottle.

Breakfast.

Ripe Blackberries.
Cracked Wheat. Cream.
Eggless Pancakes. Honey
Coffee.

Lunch or Supper.

Royal Bouillon.
Tomato and Watercress Salad.
Stuffed Egg Plant. German Horns.
Apple Pie. Cheese.
Tea or Milk.

Dinner.

Lettuce, Roquefort Cheese Dressing.
Veal Loin Chops, Sweet Potato Croquettes.
String Beans, French.
Apple Tapioca. Cream.
Coffee.

Eggless Pancakes.

One pint milk. Sift one heaping teaspoon baking powder with one cup flour, one-half teaspoon salt, and stir into milk. Add enough flour to make good stiff batter. Melt one heaping tablespoon butter and stir into batter. Thin with more milk if necessary. The cakes are improved if the batter is allowed to stand a short time. When frying cakes for a large family, butter them, stack and place in a warm oven and they will remain light and tender.

German Horns.

Scald one pint milk. Add three tablespoons butter, and when lukewarm one cake compressed yeast. Let dissolve, then stir in enough flour to knead. Knead on board 20 minutes, adding flour as necessary. Put back in bowl and set well covered in warm place until very light. Put on board and roll out in sheet one inch thick. Cut or shape in crescents, place in greased pans so they will not touch and let raise for about one-half hour. When light put in quick oven. Beat together one tablespoon sugar, one of milk and white of one egg. Have some almonds chopped fine. When rolls have been in oven 10 minutes take out and brush with egg mixture and dust with chopped almonds. Put back and bake five minutes longer.

String Beans, French.

Cook a quantity of string beans until tender. Melt a tablespoon of butter or beef drippings in frying pan, and in it cook a small, finely chopped onion until tender, but not brown. Add the beans to the onions, sprinkle over them a level tablespoon of flour and stir together. Add, if you have it, a little beef broth and season well with salt, pepper and a little finely chopped parsley.

Royal Bouillon.

To make three pints of rich bouillon take 2½ pounds lean beef, finely chopped, and cover with 2½ quarts cold water, allowing it to stand for one hour; then cover and place on a moderate fire, only just simmering for three hours, and remove any scum that may arise; now add one small onion, one carrot, a sprig of parsley, one bay leaf, two cloves, four peppercorns and two stalks of celery, all cut into dice, and simmer until the vegetables are tender. Strain into an earthenware bowl and let cool without covering. When ready to serve remove any grease and place in a granite saucepan with the white of one egg, stirring until it boils; then strain again through a fine cloth, without pressing, and serve immediately.

HOUSEHOLD QUERIES

Recipes for Tamales.

Request has come from a subscriber for recipes for tamales. We give three excellent ones.

Beef Tamales—Boil one pound of beef and pour over it some hot beef fat. Scald thoroughly one quart of meal, adding one teaspoon salt and a tablespoon lard. Cut off the upper end of corn shucks and put to boil in cold water; let scalded meal and shucks cool off; chop the beef fine and season to taste with salt and chili powder. Put a thin layer of meal on shucks (leaving shucks enough to turn ends and sides under), then put a small quantity of meat in center. Put a few shucks in bottom of a pot to prevent scorching and pack in the tamales, placing a weight on top. Cover with boiling water, adding one tablespoon each of lard and chili powder. Steam one hour.

Chicken Tamales—Cook a good-sized chicken in salted water and when tender chop the meat fine. Peel and seed a dozen red peppers, soften in warm water, then chop fine with a clove of garlic. Fry a small onion in a little lard and when brown add a tablespoon of flour, then add peppers. Cook for five minutes and add chicken with some finely chopped olives and a few raisins, if liked. Season the mixture with pepper, salt and a little sugar; meanwhile prepare a paste by mixing cornmeal with some of the liquor left when the chicken was boiled. Add a little butter or lard, season with salt and knead well. When the chicken mixture is well cooked take the necessary number of good corn husks that have been softened in warm water and spread them, first with cornmeal and then with chicken. Roll the husks so that the cornmeal will be on the outside; turn the ends and tie with twine; steam three-quarters of an hour and serve in husks.

Chicken Tamales—Boil chicken until tender; remove bones and chop meat fine; to each pound of meat add one medium-sized tomato and onion, chopped fine, salt and red pepper to taste, and moisten to the consistency of mush with chicken broth. Heat the remainder of the liquor to boiling, stir in cornmeal, make a little stiffer than ordinary mush and cook thoroughly. Soak fresh corn husks in warm water until soft, then spread a half inch layer of mush on each husk, put a good spoonful of the meat mixture on that and roll up so that the meat is covered by the mush and the whole is nicely wrapped in the husk. Turn in the ends, tie tightly with twine and steam half an hour.

For Falling Hair.

My hair is very thin and scalp covered with dandruff. It seems as if nothing would stop it. Do you know a remedy?—Reader, Corning.

Sea salt dissolved in water in the proportions of one teaspoon to one-half cup of water has been found entirely effective in many cases of dandruff and falling hair. Dip finger tips in the salt solution and rub vigorously into the scalp every day. It is not necessary to wet the hair; the value lies in getting the sea salt solution directly on the scalp and stimulating it by the massage. In a few days you may notice a slight crust of the salt forming on the scalp, but it is not so noticeable as the dandruff and is easily removed when washing the hair. Be sure to persist in the treatment regularly; it will take only five minutes a day. Done just before retiring the time is not noticed, but very soon the invigorating effect is. Be sure to buy sea salt.

NOT SO SUDDEN.

"I have saved up $500 so that I could ask you to be my wife."

"This is rather sudden."

"Sudden? I've been scrimping for three years."—Pittsburg Post.

Warm the bath room

with the glowing heat of the

PERFECTION OIL HEATER

Mother and children need it for the bath—father for his morning shave.

Dealers everywhere

Write for booklet, "Warmth in Cold Corners."

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We Will Give $1000.00 to any person who shows us an oil lamp equal to the new Aladdin (details of this reward offer given in our circular which will be sent you). Would we dare make such a strong challenge if there was any question about the superiority of the Aladdin over all other oil lamps?

Get One FREE We want one user in each locality to advertise the Aladdin. To that person we have a special introductory offer under which the one lamp is **given free.** Drop us a postal and we will give full particulars about this **unequaled offer on an unequaled light** and our **10 Day Free Trial.**

We Want Men With Rigs or Autos to Deliver the Aladdin on our easy plan. No previous experience necessary. Practically every farm home and small town home will buy after trying. One farmer who had never sold anything in his life before, writes: "I sold 51 lamps the first seven days." Another says: "I disposed of 34 lamps out of 31 calls." Thousands of others who are coining money endorse the Aladdin just as strongly.

No money required. We furnish capital to reliable men to get started. Ask for our distributor's plan, and learn how to make big money in unoccupied territory.

MANTLE LAMP COMPANY, 61 Aladdin Building, Portland, Ore.
Largest Manufacturers and Distributors of Kerosene Mantle Lamps in the World.

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Samples, prices, etc., on application. We guarantee everything we sell
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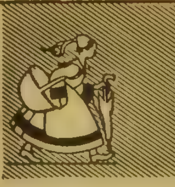

San Francisco-Los Angeles Produce Markets

Los Angeles Market

LOS ANGELES, Oct. 21, 1914.

The prices given below, except where otherwise noted, are those made by wholesale or commission houses to retailers, and are intended to give producers the range of the market rather than an indication of prices which they will secure. Jobbers' quotations to producers are not given.

BUTTER

Butter continues firm and at about last week's quotations.

Prices to trade 4 cents above following quotations:

Creamery Extras	.31
Firsts	.28@29
Country	.24
Ladle	.23

CHEESE

Prices to trade 1 and 2 cents higher:

California Fresh	.15½@16
Domestic Swiss	.22@24
Imported Swiss	.36@38
Eastern Daisy	.19@19½
Longhorn	.19½
Oregon Triplets	.18½@19

EGGS AND POULTRY

The spectacular jump in egg prices last week held for only a short time, and 10 cents has been clipped off during the week.

Prices to trade 3 cents higher than following quotations:

Fresh ranch, case counts	.45
Candled	.48@49
Northern Case Count	.51
Petaluma-Santa Rosa	.52

Prices to producers:

Hens, lb.	.13@19
Roosters, old	.9
Broilers, lb.	.21
Fryers	.16
Roasters, lb.	.15
Turkeys	.16@22
Ducks	.16
Geese	.14
Squabs, doz.	2.00

LIVE STOCK

The following quotations are f. o. b. Los Angeles on all stock:

Hogs, 175 to 200 lbs., per cwt.	8.00
Prime Steers	.7¼@7½
Heifers	.6¼@6½
Calves, lb.	.8½@9
Sheep—	
Ewes, head	4.50
Wethers	4.50@5.00
Lambs, head	4.50@4.75

POTATOES

Wholesale selling price:

Idaho	1.30@1.35
Sweets, lug	.50@60
Northern Burbanks, cwt.	1.20@1.30
Salinas	1.80@1.90
Shimas	1.35@1.45
Lompocs	1.80@1.90

ONIONS

Wholesale selling price:

Australian Brown, cwt.	.80@90
Silverskins, cwt.	1.85@2.00
Yellow Danvers	.80@90
Garlic	.13@15

VEGETABLES

Wholesale selling price:

Artichokes, Northern, doz.	.50@90
Beets, doz.	.30@35
Beans, String	.6@7
Lima	.5@6
Cabbage	.60@70
Carrots, doz.	.30@35
Cauliflower, doz.	.60@70
Celery, doz.	.40@50
Corn, Sugar, box	.65@75
Cucumbers, lug	.40@50
Pickling, lug	1.20@1.35
Egg Plant	.3½@4
Escarole, doz.	.40
Horseradish, lb.	.13@15
Leeks, doz.	.35@40
Lettuce, crate	.90@1.10
Mint, doz.	.35@40
Okra, lb.	.7@8
Onions, Green, doz. bunches	.15@20
Oyster Plant	.30@35
Parsnips, doz.	.30@35
Peas, lb.	.6@7
Peppers—	
Bell, lb.	.3@4
Chili, lb.	.2@3
Pumpkins, lb.	.2@3
Radish, doz.	.20@30
Rhubarb, box	.90@1.00
Spinach, doz.	.20
Squash—	
Summer, lug	.30@35
Crookneck	.30@40
Hubbard, lb.	.1½@2
Turnips	.30@40
Tomatoes, lug	.40@60

FRESH FRUIT

Wholesale selling price:

Apples—	
Banana Apples	1.00@1.15
Bellflowers	.70@90
Jonathans	1.25@1.35
Spitzenbergs	1.60@1.75
King Davids	1.25@1.35
Crabapples	1.00@1.10
Bananas	.3½@4
Berries—	
Strawberries, basket	.6@10
Blackberries, basket	.6@7
Cantaloupes—	
Locals, standard	1.25@1.50
Jumbos	2.50@3.00
Casabas, doz.	1.25@1.50
Cranberries, bbl.	7.75@8.25
Figs, box	1.00@1.25
Grapes	
Black Moroccos	1.00@1.10
Cornichon	1.10@1.25
Concord	1.25@1.35
Malagas, crate	1.00@1.20
Muscatels, lug	1.10@1.25
Tokays, lug	1.10@1.25
Guavas, basket	.3@4
Peaches, lug	1.00@1.15
Pears, Bartlett, packed	2.25
Seckel, lug	1.00@1.25
Persimmons, lb.	.3@7
Pineapples, lb.	.6@6½
Pomegranates, box	1.00
Quinces	.50@65
Roselle, crate	.80@90
Watermelons, lb.	.1½@2

CITRUS FRUIT

Wholesale selling price:

Lemons	2.00@3.50
Grapefruit, Seedless	2.25@2.75
Valencias	1.75@2.75
Limes, basket	1.50

DRIED FRUITS

Wholesale prices to retailers are:

Evaporated Apples, Fancy., lb. boxes	.6½@12½
Apricots	.9@11
Nectarines	.12½
Peaches	.6@6¾
Pears	.8@12
Prunes	.5¾@17
Plums	.10

NUTS

Prices named by California Walnut Growers' Association are:

No. 1	.16½
Budded Walnuts	.20
Jumbos	.19
No. 2	.12
Culls	.9

Prices fixed by California Almond Growers' Exchange, f. o. b. California.

Almonds—	
Nonpareil	.21
I X L	.20
N P U	.19
Drake's Thinshell	.15
Pecans	.17
Peanuts—	
California, Raw	.6
Japan	.7½
Eastern	.7½
Rice Corn	5.00@5.25

HONEY

Wholesale selling price:

Comb, Fancy, Water White	.15
White	.13
Light Amber	.12
Extr. Water White	.8
White	.7½
Light Amber	.6½
Beeswax	.32

BEANS

Wholesale selling price:

Producer's price not far from one dollar under these quotations:

Limas	5.60@5.75
Lady Washington	5.00@5.10
Black Eyes	6.50@7.50
Pinks	4.25@4.50
Lentils	7.25@8.50
Small White	5.75@6.25
Garbanzos	7.50

RICE

Wholesale selling price:

California	5.00
Broken	3.50@3.75

HAY

Buying prices f. o. b. cars Los Angeles:

Barley	10.00@11.00
Wheat Hay	10.00@11.00
Tame Oat	11.00@13.00
Alfalfa	9.00@11.00

GRAIN

Wholesale selling prices f. o. b. Los Angeles:

Corn, Yellow	2.20
Corn, White	2.30
Wheat	2.15
Oats, Red	1.85
Oats, White	1.65
Kaffir Corn	1.90
Millet	3.75
Popcorn	4.75@5.00
Egyptian Corn	2.05
Barley Seed	1.45
Milo Maize	2.00
Cal. Seed Oats	2.25
Sunflower Seed	5.25@5.35

FEED STUFF

Wholesale selling prices f. o. b. Los Angeles:

Bran, Heavy	1.55
Alfalfa Meal	1.05
Alfalfa Syrup, per cwt.	1.05
Beef Scraps	3.00@3.10
Beet Pulp	1.25
Cracked Corn, cwt.	2.25
Cracked Wheat, cwt.	2.30
Cotton Seed Meal	1.85
Bloodmeal	3.60@3.70
Bone Meal	2.00
Meat Meal	3.00
Sun Flower Seed	6.00@6.10
Bone Green	1.95@2.05
Charcoal	1.90@2.00
Oil Cake Meal	2.05
Fish Meal	3.15@3.25
Rolled Oats	1.90
Rolled Barley	1.35
Middlings	1.85
Feed Meal	2.30
Oat and Wheat Middlings	1.60

San Francisco Market

SAN FRANCISCO, Oct. 20, 1914.

The prices given below, except where otherwise noted, are those made by wholesale or commission houses to retailers, and are intended to give producers the range of the market rather than an indication of prices which they will secure. Jobbers' quotations to producers are not given.

BUTTER

Butter has gradually advanced and is now firm. Some extra fine stock has sold slightly above quotations.

Prices to trade 4 cents above following quotations:

Extras	.32
Prime Firsts	.28
Firsts	.26
Seconds	.24

CHEESE

Wholesaler to retailer.

Oregon Y. Am.	.12½@15
California Flats	.10@15½
Cheddar	.20
Oregon Twins	.14½

EGGS AND POULTRY

The advance in eggs has been phenomenal. Market is now firm at the higher prices.

Prices to trade 3 cents higher than following quotations:

Extras	.49
Select Pullets	.35
Storage Extras	.30

Price to producer:

Hens	.15@18
Fryers	.19@20
Roosters, old	.12
Roosters, young	.17@19
Broilers	.19@21
Belgian Hares, lb.	.9@10

LIVE STOCK

San Francisco prices, gross weight:

Steers	.9@10
Cows and Heifers	.3@6¼
Calves, lb., live weight	.6@9½
Hogs	.6½@8
Wethers	.5@5½
Ewes	.4½@5
Milk Lambs	.6½@6¾

POTATOES

Wholesale selling price:

Alvarado	1.25@1.40
Delta, Burbanks	.60@80
Salinas Burbanks	1.40@1.60
Sweets, cwt.	1.40@1.50

ONIONS

Wholesale selling price:

Yellow, sack	.30@40
Garlic, new	.10@12½

VEGETABLES

Wholesale selling price:

Beans—	
Wax	.2½@3½
Strings	.2@3
Limas, lb.	.2@4
Brussels Sprouts	.2@3
Cabbage, cwt.	1.00@1.25
Carrots, sack	.35@50
Celery, doz.	.15@30
Corn, Green, sack	.75@1.75
Cucumbers, lug	.35@60
Egg Plant, lug	.25@50
Peppers—	
Bell, lug	.25@35
Chili, crate	.35@40
Rhubarb, box	[illegible]
Tomatoes, lug	.20@40

FRESH FRUIT

Wholesale selling price:

Apples—	
Bellflowers	.40@60
Bellflowers	.40@65
Spitzenbergs	.50@90
Jonathan	.40@75
White Winter Permains	.50@65
Crabapples	.25@50
Newtown Pippins	.50@90
Bananas, Hawaiian, bunch	1.25@1.75
Cantaloupes, crate	1.00@1.50
Casabas	.50@75
Cranberries, bbl.	7.00@7.50
Figs—	
Black, double layer	.50@70
White, box, single layer	.25@40
Grapes—Crates	
Black	.35@50
Cornichon	.40@60
Tokay	.35@50
Seedless	.85@1.00
Malagas	.50@60
Muscats	.50@60
Huckleberries, lb.	.6@8
Nectarines, crate	.75@1.00
Peaches, box	.30@50
Pears—	
Bartletts, wrapped	1.25@2.00
Bartletts, lugs	.50@75
Winter Nelis, wrapped, box	.75@1.00
Other varieties	.35@75
Pomegranates, box	.25@1.25
Pineapples	1.50@2.00
Persimmons	.50@1.00
Prunes, crate	.60@1.00
Quinces, box	.75@1.00
Raspberries, chest	5.00@6.00
Strawberries, chest	2.50@4.00
Watermelons, doz.	.75@2.00

CITRUS FRUIT

Wholesale selling price:

Grapefruit, Seedless	1.25@2.50
Lemons	2.00@4.50
Lemonettes	1.50@2.00
Limes, case	3.00@5.00
Valencias	1.75@2.75

DRIED FRUITS

Wholesale prices are:

Prunes—1914 crop, bulk basis, 30-40s, 6½c@6¾c; 40-50s, 6@6¼c; 50-60s, 5½@5¾c; 60-70s, 5½@5¾c; 70-80s, 5¼@5½c; 80-90s, 5¼@5½c; 90-100s, 5¼@5½c. 1913 crop worth practically same prices. The above are for Santa Clara Prunes, outside sections about ¼c.

Other Fruits 50-lb. boxes—	Standard.	Ch.	Extra Ch.	Fcy.
Evaporated Apples	5¾c	6 c	7 c	
Apricots	6½c	7½c	8 c	8¾c
Peaches	3½c	4 c	4¼c	5
Pears	7 c	8 c	9 c	10

RAISINS

RAISINS—The following prices are f. o. b. Fresno, as given out by the Associated Raisin Company for October shipment, and with the exception of bulk seeded and ungraded Muscatels are guaranteed against a decline to December 31st: Fancy seeded, 16-oz., 6½c; 12-oz., 5½c; bulk, 6c; choice seeded, 16-oz., 6⅛c; 12-oz., 5c; bulk, 5½c; loose Muscatels, 2-crown, 5c; 3-crown, 5¼c; 4-crown, 5¼c; ungraded, 5c; 1914 crop—Thompson Seedless, No. 1, pkgs, 7⅜c; 12-oz., 6c; 50-lb. cs., 6¼c; Sultanas, 50-lb. cs., 5½c; bulk, layers, 50-lb. bxs., $2.75; in 20-lb. bxs. 6-crown, $2.75; 5-crown, $2.25; 4-crown, $1.60; 3-crown, $1.30; 5-lb. bxs. on all bulk stock, 50c additional; 10-lb. bxs., 25c additional. Car tons—Clusters, 20 to a case, No. 1, $1.70; No. 2, $2.10; No. 5, 4 to a case, $2.25. Local representatives of the association are asking about ¼c higher, while several of the larger packers are quoting ½c under these figures.

NUTS

ALMONDS—Prices fixed by Almond Growers' Exchange to the trade, f. o. b. California:

Nonpareil	.21
I X L	.20
Ne Plus Ultra	.19
Drakes	.16

Wholesale selling price:

Peanuts—	
Unpolished	.5@8
Polished	.6@6½
Japanese, Shelled	.6¼@6¾
Italian Chestnuts	.6½@7

BEANS

Wholesale selling price:

Limas	5.15@5.25
Lady Washington	3.60@3.75
Pink	3.25@3.50
Black Eyes	3.50@3.75
Cranberry	3.60@3.80
Small White	4.50@4.75
Garbanzos	5.50@5.75
Large White	3.35@3.50
Bayou	4.00@4.25
Manchurian Speckled Bayous	3.50@3.75
Manchurian Butters	4.25@4.50
Manchurian Cranberry	4.00@4.25
Red Mexican	5.25
Red Kidney	4.00@4.25
Horse Beans	2.25@2.50
Bayou, Mexican	4.00@4.25

HONEY

Comb, Water White	.14@16
Amber	.10@12
Dark	.7@10
Extracted White	.7@9

WEATHER CONDITIONS

For week ending Oct. 17, 1914.

Report from the various stations of the U. S. Weather Bureau, by Geo. H. Wilson, director, San Francisco:

	Rainfall Data			Temperature Data	
	Past Week.	Seasonal to Date.	Normal to Date.	Maximum.	Minimum.
Eureka	1.20	3.76	2.67	68	44
Red Bluff	.60	1.12	1.55	90	50
Sacramento	.42	.50	.86	86	48
San Francisco	.25	.28	.86	89	54
San Jose	.36	.36	.81	90	44
Fresno	.02	.22	.62	92	50
Independence	00	.20	.61	82	38
San Luis Obispo	.02	.02	.93	98	50
Los Angeles	.00	.19	.35	96	58
San Diego	.00	.68	.32	84	54

T means trace.

Light Amber	6½
Dark	4@5½
Beeswax	27@32

HOPS

1914

Sacramento Valley	11@11½
Sonoma-Mendocino	11½@12½
Oregon Clusters	11½@12

HAY

We quote the average wholesale prices on carload lots on today's market as follows:

Fancy Wheat Hay, lt. bales	11.00@12.00
No. 1 Wheat or Wheat and Oat	8.00@9.00
No. 2 Wheat or Wheat and Oat	6.00@7.50
Choice Tame Oat	10.00@11.00
Other Tame Oat	7.00@9.00
Barley	5.50@7.50
Wild Oat	5.00@7.00
Alfalfa	6.50@9.00
Stock Hay	4.50@5.00
Straw	30@45

GRAIN

Wheat, Cal. Club	1.65@1.67½
Corn, Eastern Yellow, blk	1.75@1.77½
Corn, Egyptian White	1.45@1.46¼
Barley, Feed	1.05@1.07½
Oats, White	1.42½@1.45
Oats, Red, Feed	1.35@1.50
Millet	3@3½
Flax	5@6
Rye	1.50@1.60
Sunflower	5@5½

FEED STUFF

Alfalfa Meal, car lots	12.50@13.50
Bran, ton	28.00@29.00
Feed Cornmeal, ton	40.00@41.00
Cracked Corn	40.00@41.00
Rolled Barley, ton	24.00@25.00
Rolled Oats, ton	37.00@37.50
Middlings	30.50@31.50
Shorts	29.00@30.00
Oilcake Meal	32.00@33.50
Cocoanut Oilcake Meal	23.00@24.00

Citrus Fruit Market

LOS ANGELES, Oct. 21, 1914.

The Valencia market is much stronger. At the beginning of this week there were about 650 cars of Valencias yet to ship from California. By the end of the week one-half of this will have been shipped, which will end the heavier shipments. The remaining 300 or 400 cars will be distributed over the period between this and November 10. It is thought that date will see every Valencia out of California. The early navel sections are reporting fruit coloring nicely, and shipment will begin during the first week in November. Reports from eastern markets are in effect that Floridas are holding back, waiting for California Valencias to get out of the market before sending in any quantity. Shippers of fruit at present prices are receiving not far from $1.50 net, this for good fruit.

Lemon market featureless with few shipments going forward.

Shipments

Shipments of oranges to date since November 1, 1914, 38,436 cars; lemons, 2,862; total, 41.298. To same date last season: Oranges, 13,520; lemons, 2,175; total, 15,695. Total citrus fruits two years ago this date, 35,895.

NEW YORK, Oct. 19.—Twenty-two cars Valencias sold. Market strong, generally higher. Weather fair.

VALENCIAS—	Avge.
Orchard, National O. Co.	$3.45
Standard, National O. Co.	2.90
Old Mission, fy, Chapman	3.65
Golden Eagle, sd, Chapman	3.20
Windermere, Windermere Ranch	3.15
Old Mission, xf, Chapman	4.35
Old Mission, fy, Chapman	3.55
Golden Eagle, Chapman	3.20
Economy, Amer. F. Dis	2.65
Arden Villa	4.70
Alphabetical, O. R. Ex	3.75
Ticktock, O. R. Ex	3.50
Glendora Heights, xf, A.C.G. Ex	4.30
Glendora Heights, Foothill	2.75
Evolution, A. C. G. Ex	3.05
Carmencita, S. T. Ex	3.65
Colombo, S. T. Ex	3.25

PHILADELPHIA, Oct. 19—Five cars sold. Cool. Market advancing.

VALENCIAS—	Avge.
Home, A. C. G., Glendora	$3.10
Parrot, S. A., Pomona	2.90
Quail, O. K., Ontario	3.15
Coyote, O. G., Ontario	2.80
Imperial, O. K., Ontario	2.70
Colombo, S. T., Placentia	2.95

BOSTON Oct. 19.—Four cars oranges, one car lemons sold. Raining. The market continues strong.

VALENCIAS—	Avge.
Rooster, O. R., Orange	$3.30
Pinnacle, O. K., Upland	3.40
Carmencita, S. T., Placentia	3.30
Pinnacle, O. K., Upland	3.30
LEMONS—	
Whittier, S. T., Whittier	$4.65
Pico	4.40

CINCINNATI, Oct. 19.—Cool. Market weak on small sizes. Four cars oranges, one car lemons sold.

VALENCIAS—	Avge.
Greyhound, S. A., Pomona	$1.95
Hawk, S. A., Pomona	2.35
Hunter, A. C. G., C. Spur	2.70
LEMONS—	
Aeolus, V. C. Limco	$2.65
Corus	2.45

CLEVELAND, Oct. 19.—Three cars Valencias sold. Market strong on Valencias. Cool, clear.

VALENCIAS—	Avge.
Pointer, A. C. G., L. Spur	$3.00
Carmencita, S. T. Ex	3.20
Colombo, S. T. Ex	3.05
Silver Moon, No. Amer. F. Dis	2.70
So. Cross, No. Amer. F. Dis	2.25

ST. LOUIS, Oct. 19.—Cool, cloudy. Market steady. Five cars Valencias sold.

Cardinal, O. R., Orange	$3.05
Searchlight, O. R. Orange	2.70
Trial, A. C. G., L. Park	3.15

PITTSBURGH, Oct. 19.—Three cars oranges, one car lemons sold. Cool.

VALENCIAS—	Evge.
Mill Creek, R. H., Mentone	$2.65
Cornucopia, R. H., Mentone	2.35
Prairie Chicken, A. H., Arlington	2.65
Jasmine, D. M., Monrovia	2.75
LEMONS—	
Leader, Q. C., Corona	$3.35
Linwood	2.35

THE WALNUT SITUATION

Regarding the present walnut situation, we have to advise that indications now point to a lighter crop of California walnuts than the state has produced for many seasons past. Our present estimates are for a total crop of 8,000 tons or less for the state. While the sizes of the walnuts are not running up to our earlier expectations, which is undoubtedly due to the fact that the nuts have ripened a little prematurely this year and to the further fact that the outer hulls which drop off before the nuts are gathered were unusually thick and pithy this season, nevertheless the quality of the goods is excellent. A peculiar feature of the output this year is the fact that, while the nuts are not running heavily to large sizes, nevertheless they are running exceptionally light to No. 2's. Against an average in 1913 of 27 per cent No. 2's, the crop is only averaging 3 per cent of this grade this year. We have therefore found it necessary to greatly reduce all No. 2 orders, and are now prorating on a basis of 40 per cent on all orders for this grade. We regret having to do this, but there is no alternative. We simply haven't got the goods, and they are not obtainable. We have not shipped a car which has not cracked up better than 90 per cent good, and the average crop is showing about 94 per cent, the great majority being beautiful clear white kernels. We are firmly of the belief that when the consumers' demand for walnuts around Thanksgiving time comes, the markets generally will show a shortage of supply and a consequent much stronger demand. It can hardly be expected that this demand on the part of consumers will develop much before the holiday period, as the average person has not thought of buying walnuts during the hot weather while so much fresh fruit is still available. It is now practically certain that but very limited supplies of foregn nuts will be available for this Thanksgiving trade, and as the average consumption of walnuts at this period is accurately estimated at 33,000,000 pounds, it is hard to figure where anywhere near this quantity of walnuts will be found this season.—California Walnut Growers' Association.

LEGAL

(Continued from Page 389.)

out of court. In 1907 the legislature passed an act repealing all former acts as to stock trespassing upon unenclosed land, and this act has the following provision: "It is unlawful for any person, firm or corporation, owning or having possession of any animal to suffer or permit such animal to break into and enter upon any land owned by or lawfully in the possession of any person, firm or corporation other than the owner of such animal, in all cases where such land is planted to growing crops, vines, fruit trees or vegetables and is at the time entirely enclosed by substantial fence or other enclosure."

No animal is exempt from execution under this act. However the act expressly makes itself subject to the act relating to estrays, enacted in 1901. This act of 1901 has been amended several times, the last amendment being 1909, and the wording of this act gives a person a lien upon the animal found upon his premises for all damages, expenses and costs, incident to the taking of such estray. The act defines an estray as follows: "The word estray as used in this act is intended to include all domestic animals that have strayed upon or been found upon lands other than those of their owner or the public domain or lands whose owner (or to which the person in possession thereof) has consented, may be passed over or allowed to be entered on by said animal."

Thus the owner of unenclosed land may take up trespassing animals and cause same to be advertised and sold. He cannot obtain damage against the owner thereof for the damage done to his property by such animal.

Line Fence.

Some years ago a neighbor and I agreed to build a line fence. I built one-half and he the other. However, his half of the fence was built some four or five inches from the line on his land and directly on the line were planted eucalyptus trees. In time the trees crowded the fence, which was rebuilt this time entirely on my land. Now the neighbor proposes to cut the trees which are on the line. Are these trees all his or have I an interest in them? Has the building of the fence on my land given any title whatever to the narrow strip which it and the trees occupy?—Subscriber, Los Angeles.

In case these trees are planted wholly or in part upon the boundary line they are the common property of you and your neighbor, and for injury to or destruction of such trees you may bring suit against him for the damage caused. Your interest is common with you neighbor s. The building of the fence upon your land has not, unless he has paid taxes upon the land enclosed, given him any title to that land.

Water Bill.

A. owns a house which he rents to B. at a certain price per month, water extra. B. pays his rent to A. and his water bill to the company regularly each month until the last month of his occupancy of the house, then moves out leaving the water bill unpaid. The water company shuts off the water and refuses to turn it on again until A. has paid B.'s water bill, and also one dollar for turning on the water. Will the law support the water com pany in their stand?—Subscriber, Sawtelle.

Under recent decision of the appellate court, the city of Los Angeles in case similar to the one stated was compelled to turn on the water without payment of the former occupant's bill.

Farmers' Club.

Can a farmers' club be formed and own property, either real or personal, without forming a corporation under the laws of the state? If it is necessary to form a corporation what is the cost and what steps are necessary?—Subscriber, Stockton.

You may form your club in the nature of a partnership. The best way would be to incorporate under the provisions for social corporations. These provisions require the articles of incorporation to be filed with the clerk of the county within which you are located, and certified copy thereof filed with the secretary of state. The particular provisions for corporations are extensively set forth in the Civil Code, Sections 593 to 606 and 290. The actual filing fees would amount to from $35 to $50.

Title to Homestead.

A. has a piece of land in his own name. He and his wife separated and without any action for a divorce or settlement she filed a homestead on this land, then bought her husband, A.'s interest and A. gave her deed as his wife. Then Mrs. A. deeded it to B., B. to C., and C. to D. Now the abstract company says, "Mrs. A. filed a homestead on this property, and for that reason should have had her husband's signature, as the deed from him to her did not convey his homestead right." However, a quit-claim deed from A. to D. would clear this up. Has D. a clear title or not and if not what is the trouble?

The law provides only two methods whereby land may be released from the homestead provisions; this is by declaration of abandonment or by grant deed executed by both parties. D. has a title which would be entirely enforceable under the circumstances stated. The cloud is so small that it will make little difference.

Water Right

A. buys land from a water company, paying $140 per acre with water right, paying three cents per inch for water used on land. The land was bought with the understanding that A. was to have use of such amount of water as he required to irrigate said land at three cents per inch. Now, by a ruling of the commissioners, the water company requires $6.00 per acre in advance payable in quarterly installments, regardless whether you want water or not. If not paid in 90 days after notice, A. loses all right to the water. Would like to know, if, in case A. refuses to pay the $6.00 per acre, as required by the water company, can the company take the water away from him. The land is set to apple trees in their fourth year; if the water company takes A.'s water away from him, can A. recover damages; land being valued now at $500 per acre with water right?—Subscriber.

The statement is "that the land was bought with the understanding" that A. was entitled to water at three cents per inch, as he might require. The rights of A. in this case depend entirely on his contract with the company. If, however, you have a contract for water at three cents per inch, you can bring action to require the company to comply therewith, and for breach of its obligation you can hold the company liable. From the statement in quotation, it would seem, however, that you had no definite contract for a stated period of time, but a mere oral agreement, which of course will be subject to change.

Right to Run Ditch

A neighbor is conducting his water in ditch over my land. The water leaves the head ditch on his land, afterwards coming through the fence and running a few hundred feet, being taken back within his boundary. Am glad to make the accommodation unless he will acquire permanent rights. Does he do this and in what period of time, and can I be protected by his giving me any written agreement?—Subscriber, Imperial.

Your neighbor and successors in interest would, after five years from the date of the commencement of this arrangement, attain a right by prescription to have the water run over your land; by making a written agreement licensing your neighbor to run this water for a definite period of time you may avoid such prescriptive right. It would be a more careful way to have this license agreement acknowledged and recorded.

Bolton
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One gallon size 20c
Two gallon size 27c
F. O. B. Your Station
Write for our new booklet C. C.
Absolute Protection Against
FROST DAMAGE
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We are booking orders for Citrus and Deciduous Trees of all kinds. Guaranteed true to name. Write us for prices.

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Your natural questions regarding The Yuba Ball Tread Tractor:—

Can I use it profitably in my orchard?

Because it is designed for the exactions of orchard work, can I use it for plowing, harrowing and harvesting on my grain land?

What good is it for hops?

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These and a hundred other questions are answered in this booklet.

THE YUBA BALL TREAD TRACTOR

Each of the main branches of farming are dealt with in detail in this booklet. The mechanical features are thoroughly explained. You are told why The Yuba Ball Tread Tractor is one of the best farm equipment investments that can be made; why its cost of operation and maintenance are lower than that of other forms of hauling-power producers on the farm, and why it gives "more power to the cubic inch of mechanism."

The coupon, filled out, brings the answers to your questions.

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Gentlemen: Kindly send me a copy of your booklet "The Yuba Ball Tread Tractor.'

Name.................................... *P. O. Box*....................
Town.................................... *State*....................
Size of Farm.............*Acres.* *(Check main crop raised.)*
Fruit .... *Rice* ....
Grapes.................... *Alfalfa*....................
Grain .... *Hops* ....
Hay ....

CA

CALIFORNIA CULTIVATOR

Rural Californian combined with California Cultivator

An Illustrated Weekly Magazine, Devoted to the Rural Home and Ranch

LOS ANGELES October 29, 1914 SAN FRANCISCO

Personal Glimpses of State Dairy Convention

Photos for California Cultivator by Dr. Anderson.

Prof. True (center) joining political discussion of W. H. Langdon.

Secretary Andreasen and Secretary Carver discussing State Department of Agriculture.

The president of Stanislaus Livestock Association and Farmer Langdon.

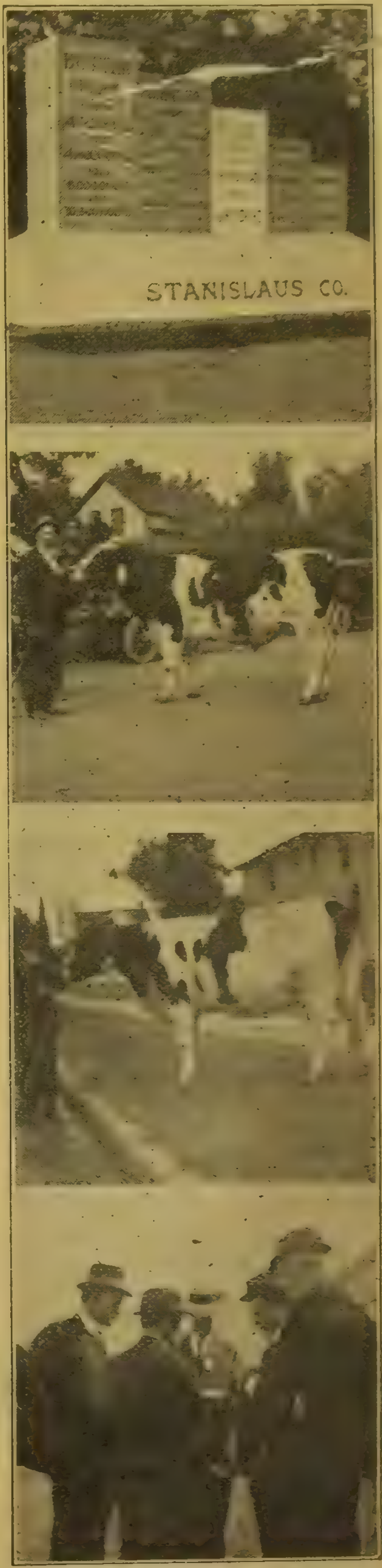
Prof. Davis and Mrs. Davis.

Messrs. J. P. Murphy, McEdwards, Stowe and J. R. Murphy

Sam Green starting home. Joe Frietas at his left. F. H. Daniels, right.

Messrs. W. B. Starkweather and A. R. Bates, President C. C. O. A.

Messrs. Murphy, Andreasen, Chester Rowell, W. A. Perry and A. B. Bates.



Stanislaus County advertises her agricultural resources.

G. W. Barber and his grand champion Holstein bull.

H. E. Cornwell and his grand champion Holstein cow.

Chester Rowell explains how Gov. Johnson is a friend of the dairyman.

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TRADE MARK
LUBBOCK S.G.S.A. TEXAS
FREE SAMPLE OF SUDAN GRASS SEED
Lubbock Sudan Grass Seed Association
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PART OF SAME FIELD SHOWING BOTH HALF MATURE AND YOUNG PLANTS.

200 ACRE FIELD OF SUDAN GRASS GROWN BY E. J. COWART, LUBBOCK, TEXAS.

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Read the facts about this wonderful new forage crop—satisfy yourself of the genuineness of Lubbock Association Guaranteed Seed.

You can't afford to take any chances when you order your supply. The success of your crop depends upon the quality and purity of the seed you put in. Poor seed can't produce anything but a poor crop and what is more, the adulterated mixtures that are sold as Sudan Grass Seed will sow your land with Johnson grass, weeds and other troublesome pests.

Here's the evidence for LUBBOCK ASSOCIATION SUDAN GRASS SEED given by the best authorities of the day:

Mr. Vinall of the Forage Division of the Department of Agriculture at Washington went on record as saying that the *Lubbock County Sudan Grass* crop was the finest he had seen anywhere in the United States.

Mr. A. K. Short, Supt., Temple-Belton Experiment Station, Texas, writes:—"The past year (1913) "Lubbock County grew more Sudan than any county in the United States, and more than any state in "the Union. This year it will still maintain the lead in seed production."

Mr. B. Youngblood, Director, Texas Experiment Stations, states: "We took special pains to organize a "local experiment association at Lubbock and have a considerable acreage planted there, as we felt that "the Texas Plains country would be one of the best seed producing centers in the United States."

The *Sudan Grass Seed* we offer for sale has been grown under the supervision of Texas Sub-Station No. 8, located in Lubbock County, V. L. Cory, Supt., and every field has been officially inspected, certified to and passed before harvesting. The Trade Mark of the Association is on every package and guarantees the strict purity and unquestionable germinating power of the seed.

WARNING—We are the only authorized agents for selling LUBBOCK ASSOCIATION GUARANTEED SEED. Be sure that all seed you buy has our name and trademark stamped on the bag. None other is genuine. This is the only way you can get protection from adulterated seed and insure a profitable harvest.

Put up in 1-2-5-10-25-50 and 100 lb. packages. Retail prices delivered:—

1-10 lbs.	$1.00 per lb.
11-25 "	.95 " "
26-50 "	.90 " "
Excess of 50 lbs.	.85 " "

LUBBOCK SUDAN GRASS SEED ASSOCIATION
Selling Agency for Lubbock County Experiment Association
DEP'T C LUBBOCK, TEXAS

With Orders Amounting to $75.00 or Over

This offer is made to stimulate our mail order business. **We want everyone to have one of our Building Material Catalogs.** Follow these instructions and receive **750 sq. feet of galvanized poultry wire FREE.** Send coupon below for catalogue. Look over the thousands of bargains. Then send us your order, amounting to $75.00 or over, and the **FREE** offer will be shipped.

If order does not amount to $75.00, save your receipt and when you have purchased $75.00 worth of Building Material from us, we will ship **FREE** offer with the last order. All that is required is that the first order arrives before Jan. 1, 1915. **Can you appreciate this offer?**

Our prices on all grades of **Building Material** are 25 to 40 per cent under the market. Our **Million Dollar Stock** enables us to do this. Write today! Convince yourself that buying from us by mail is most convenient and economical. Look at the prices in list below. Compare them! And remember everything we sell is guaranteed satisfactory or money refunded.

THE WAY TO OBTAIN FREE FENCING

High Tank

Toilet Combinations complete to floor; special bankrupt stock	$10.00
Low down enamel steel toilet combination complete to floor	$12.50
Low down vitreous china closet combination; Special	$16.00
Special reductions on Kitchen Sinks: 20x30, No. 2; 18x36, No. 2	$2.75
Corrugated Galvanized Iron, special price, until further notice, all lengths from 6 to 10 feet; per 100 sq. ft.	$3.75
Roofing paper: 1 ply sanded	$1.00
2 ply sanded	$1.75

Samples sent on request.

A complete line of bath tubs, lavatories, toilets, pipe, fittings, etc.

Instantaneous heaters, in good order	$7.50
Fire damaged toilet combinations	$9.50
Sheet steel sinks, slightly smoked; all sizes; each	$1.00
Wall Board: 650 pounds to the thousand. No. 2, regular price $25, cut to per thousand sq. ft.	$19.00
Standard line House Paint, guaranteed. All colors, per gallon	$1.50
Shingle stain, all colors and black	$0.50
Graphite Roof Paint, per gallon	50c
Interior Oil Stains, per gallon	$1.00

Everything else in the paint line at proportionate prices. We carry everything in **Building Material.** Our stock is complete.

Lumber

We positively have the best offerings in Lumber, both in rough and finish, in Southern California. You lose if you do not write us for estimates.

Always the Lowest on Sash and Doors

We carry everything in this department. Two light, double hung windows, 1⅜ inches thick. Best Quality American window glass, all sizes..... 60c up

No. 1 Colonial Door, selected kiln dried Oregon Pine, this is a special value, all stock sizes....... $1.50 up

Second Hand Building Material Carried Only by Whiting Wrecking Co.

2x8 and 2x10 to 24 ft.; Per M.	$12.00
2x14 and 2x16, 24 ft. Per M.	$15.00
We have lengths to 38 ft. 3x14 to 38 ft. Per M.	$15.00
1x8 No. 3 Redwood boards. Per M.	$12.00
⅝x4 ceiling new. Per M.	$20.00
1-inch pine boards, all lengths, per M.	$11.00

HARDWARE

Copper bottom boilers	$1.50
Galvanized tubs, each	40c
Galvanized buckets, each	25c

A complete and full line of fencing of all kinds.

Everything in light builders' hardware.

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Vol. XLIII No. 18 LOS ANGELES: THURSDAY, OCTOBER 29, 1914 One Dollar Yearly

Don't Ship Green Oranges

The Department of Agriculture Has Sent to California Experts Headed by E. M. Chace, Who Will Aid in Determining What an Edible Orange Is. Work is Now Proceeding in Tulare County

TO the Members of the Citrus Protective League: In connection with the shipment of early oranges from California Dr. C. L. Alsberg, chief of the bureau of chemistry, United States department of agriculture, has written to the league as follows:

"As a result of the investigations carried on last year, it is believed that the northern district oranges may be considered to be immature when the juice does not contain soluble solids equal to or in excess of eight parts to each part of acid present, acid to be calculated as citric without water of crystallization. It has been determined to base this figure upon the acid solids ratio in preference to the acid sugar ratio for the reason that the growers and packing house foremen will be able to make the necessary analyses, which would be impossible in the case of sugars. As soon as the bureau has representatives upon the coast the question of instructing a limited number of packing house employees in making these tests will be taken up."

Efforts are now being made by a majority of the shippers interested in the early districts to have the fruit shipped conform to this suggested standard, and Mr. E. M. Chace, chemist in charge of citrus byproducts laboratory of the United States department of agriculture, has written out "Directions for Using Field Apparatus," which follows, and also a list of the apparatus necessary to enable the grower or packing house employee to make the determinations necessary to show whether or not his fruit complies with this suggestion. The apparatus can be obtained from any dealer in chemical supplies. The tests are simple and are easily made by any careful person.

It is our belief that the California citrus fruit growers generally realize the necessity of shipping only such fruit as will give satisfaction to the consumer and will endeavor to have all shipments conform to the standard suggested by the department.—F. O. Wallschlaeger, secretary.

Apparatus

1 Brix spindle, graduated in tenths, range from 10 to 20 degrees, with thermometer (Centigrade.)

1 cylinder of glass or metal, 15 inches high by one and one-half to two inches in diameter.

1 Pipette of 25 cubic centimeters capacity for measuring juice.

1 Pipette of smaller size for use with the indicator.

1 Burette of 50 cubic centimeters capacity, graduated in tenths, for measuring the standard solution.

1 Liter of standard alkali solution, preferably having one cubic centimeter of the solution equal to .01 grams of citric acid without water of crystallization.

One hundred cubic centimeters of a solution of phenolphthalein in alcohol, one gram to one liter in strength, for use as indicator.

An eight-ounce flask, beaker glass or precipitating jar in which to make the titrations.

A beaker or granite ware cup of one quart capacity for holding the juice.

The less expensive parts of the apparatus should be ordered in duplicate. The outfit can be obtained from dealers in chemical supplies.

Directions for Using Field Outfits

In order to make the sample as representative as possible, at least 12 oranges should be taken, preferably from several trees. They are halved or quartered depending upon the size, and the juice removed by means of a lemon squeezer. It is thoroughly mixed and strained through cheesecloth.

The glass cylinder is then filled three-fourths full of the juice, the spindle placed in it and sufficient juice added to overflow the cylinder. The spindle is allowed to remain for a few minutes, care being taken that it does not touch the sides of the cylinder. The reading is then taken, the line nearest the top of, but not in the juice, being read. The spindle is then partly removed from the cylinder and the temperature indicated by the thermometer noted. From table A the correction to be applied is found, and added to or taken from the reading. (It is subtracted where the reading is below 17½ degrees and added where it is over that figure.)

Example—Reading of the spindle 12.0, reading of the thermometer (C) 15.0. Correction given in the table .13. The corrected reading is therefore 11.87, which is the percentage of soluble solids in the juice. The specific gravity is then ascertained from table B. For the purpose of obtaining the specific gravity the corrected Brix reading can be assumed to be 11.9 and from the table the specific gravity of this solution is found to be 1.0481. (Where the second figure of the Brix reading after the correction is applied is above five the next highest figure may be taken, if five or below the next lowest figure may be used.)

To determine the percentage of acid in the juice, draw the 25 cubic centimeter pipette full of the juice and allow it to run out until the top level of the liquid reaches the zero line. Place the point of the pipette in the glass flask and allow the juice to flow into it. Do not hurry the flow by blowing into the tube. Add two or three volumes of distilled water and a few drops of solution marked "Indicator." Now add from the burette, in small quantities at a time, the standard alkali solution, shaking the flask constantly, until a permanent pink color is established. Now take the burette reading. To ascertain the amount of acid in the juice, multiply this reading by the factor for one cubic centimeter of the standard solution, this is usually .01. To find the percentage of acid divide the figure by the weight of juice taken. The weight of juice taken is obtained by multiplying its specific gravity by 25 (the number of cubic centimeters taken).

Example—The height of the liquid in the burette has fallen from zero to 41.1. This figure multiplied by .01 gives .411 weight of acid in 25 cubic centimeters of juice. 411 divided by 26.2, the weight of 25 c c of juice, gives 1.57 per cent of acid. (26.2 is obtained by multiplying the specific gravity of the juice, 1.0481, by 25.)

The acid solids ratio is now found by dividing the soluble solids by the acid.

Example — Soluble solids, 11.87, divided by acid, 1.57, gives the ratio of 1 to 7.6.

Table A

Table for the correction of Brix spindle when the reading is taken at other than the standard temperature 17.5 degrees Centigrade.

In using this table the tester must be sure that the Brix spindle is standardized at 17.5 degrees Centigrade.

Temp, of Juice, Deg, Cent.	Deg. Brix of the Solution 10	20
0	0.41	0.52
5	0.37	0.44
10	0.29	0.33
11	0.26	0.28
12	0.22	0.24
13	0.19	0.21
14	0.16	0.17
15	0.12	0.14
16	0.08	0.09
17	0.03	0.03
18	0.03	0.03
19	0 08	0.09
20	0.15	0.17
21	0.22	0.24
22	0.29	0.31
23	0.35	0.37
24	0.41	0.43
25	0.47	0.49

If temperature is below 17.5, subtract the correction.

If temperature is above 17.5, add the correction.

Table B

To be used to determine the specific gravity of orange juice from the reading on the Brix spindle.

Corrected Brix	Specific Gravity	Corrected Brix	Specific Gravity
9.0	1.0360	12.6	1.0511
9.1	1.0364	12.7	1.0515
9.2	1.0368	12.8	1.0519
9.3	1.0372	12.9	1.0523
9.4	1.0376		
9.5	1.0381	13.0	1.0528
9.6	1.0385	13.1	1.0532
9.7	1.0389	13.2	1.0536
9.8	1.0393	13.3	1.0540
9.9	1.0397	13.4	1.0545
		13.5	1.0549
10.0	1.0401	13.6	1.0553
10.1	1.0406	13.7	1.0558
10.2	1.0410	13.8	1.0562
10.3	1.0414	13.9	1.0566
10.4	1.0418		
10.5	1.0422	14.0	1.0570
10.6	1.0426	14.1	1.0575
10.7	1.0431	14.2	1.0579
10.8	1.0435	14.3	1.0583
10.9	1.0439	14.4	1.0588
		14.5	1.0592
11.0	1.0443	14.6	1.0596
11.1	1.0447	14.7	1.0600
11.2	1.0452	14.8	1.0605
11.3	1.0456	14.9	1.0609
11.4	1.0460		
11.5	1.0464	15.0	1.0613
11.6	1.0468	15.1	1.0618
11.7	1.0473	15.2	1.0622
11.8	1.0477	15.3	1.0626
11.9	1.0481	15.4	1.0631
		15.5	1.0635
12.0	1.0485	15.6	1.0639
12.1	1.0489	15.7	1.0644
12.2	1.0494	15.8	1.0648
12.3	1.0498	15.9	1.0653
12.4	1.0502		
12.5	1.0506	16.0	1.0657

State Dairymen in Session at Modesto

Dr. Leroy Anderson Gets Busy with His Little Camera and Big Pencil. Photos on the Cover and the Notes Following Result.

AN interesting feature of the dairy show was the love of fine stock shown by the residents of Stanislaus County. One might imagine that people who are in daily contact with cows would not trouble themselves to go far to see a cow show. But the large hay barn in which the cattle were tied was filled from morning to evening with an admiring crowd. It would appear that the cattle here had more visitors than at the state fair. Professor True, when placing the ribbons, was so surrounded by men, women, boys and girls that he had difficulty in seeing the cattle, all of which goes to show that cows are popular in Stanislaus County and that no other county can soon take a higher place in the dairy cow column than Stanislaus. Such spirit and such cows are hard to beat.

* * *

THE AWARDS

Holstein-Friesians

Aged bulls—1, King Pontiac Ruby Burke, A. B. Kendall; 2, Acme Pontiac, J. W. Benoit. Two-year old bulls —1, Sir Jesse Fobes Piebe Burke, G. W. Barber. (This bull also grand champion Holstein.) One-year-old bulls —1,Merci Hengerveld De Kol, J. B. Pilander (also junior champion Holstein); 2, Prince Teake Lyons Cloverdale, H. B. Cowan. Senior bull calf—1, El Prado Wayne Colantha, J. W. Benoit; 3, Circuela Mike, L. D. Thompson. Junior bull calf—1, Wayne Barnum Riverside, J. W. Benoit. Aged cows—1, Circuela Hermana Mechthilde, H. E. Cornwell (also senior grand champion Holstein); 2, Karoba Electa, J. W. Benoit; 3, Arondare Cloverdale, J. W. Benoit. Three-year-old cows—1, Venteth Electa Netherland, J. W. Benoit; 2, Holly Bee De Kol Korndyke, J. W. Benoit. Two-year-old cow—1, Circuela Maid, H. E. Cornwell. Yearling heifers—1, Sissy Canary Victoria, J. B. Pilander. Senior heifer calf—1, Teake Lyons Contenta, H. B. Cowan (also junior champion Holstein). Junior heifer calf—1, Hermana Mechthilde Circuela 4th, H. E. Cornwell.

Jerseys

Aged bull—1, Altama Interest, Guy H. Miller (also senior and grand

(Continued on Page 424)

COVER CROPS

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Burr
Clover
Vetches

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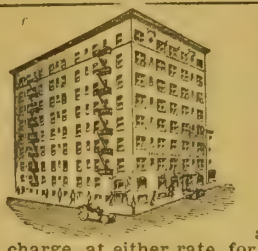

Important Notice to those attending ***THE FRUIT GROWERS CONVENTION***

The attention of the delegates and members who will attend the State Fruit Growers' Convention to be held in Los Angeles on November 9th to 14th, is called to the fact that the Hotel Northern has been selected as one of the headquarters, and in consideration of this the Management has made a very special rate for all delegates and their friends attending the Convention, which gives them the opportunity of obtaining a first-class room without attached bath for $1.00 per day, or a room with connecting bath for $1.50 per day; no extra charge, at either rate, for two persons occupying same room. These prices cover all rooms in the hotel, some usually renting as high as $5.00 per day.

The above special rates are made by the Management of the Hotel Northern to the members of the State Fruit Growers' Association and their friends in order to get this new, modern, fireproof hotel known to the fruit growers of the state. Send them a postal card and room will be reserved for you.

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State Fruit Growers Convention

45th State Fruit Growers Convention Combined with Fruit Growers Second Annual Assembly and State Association of County Horticultural Commissioners. Women's Department Will Have Attractive Features

THE week of November 9-14 promises to be one rich in opportunity for fruit growers. Monday and Tuesday will be given to the county horticultural commissioners.

On Tuesday evening the state convention proper will be called in the assembly rooms of the former Normal School building at Los Angeles. The committee of arrangements has made plans for every convenience for the convention and the program committee has a magnificent offering of speakers.

Each afternoon the women's department of the convention will gather in the parlors of the Hotel Clark. Miss Lilian D. Clark of Berkeley will have charge of these meetings, and women from all sections of the state will make addresses on home economics and business opportunities for women in horticulture.

The railroads have granted fare and a third rates, and it is urged that every attendant at the convention buy a one-way trip ticket and demand receipt from the ticket agent, which will be signed by the secretary of the convention and will be warrant for one-third fare on the return trip.

Convention of County Horticultural Commissioners

On Monday morning President Stabler, of the County Horticultural Commissioners' Association, will call the meeting to order. The points discussed will be: "Depot Inspection," by Messrs. F. W. Waite and A. S. Hoyt; "Law Enforcement," C. W. Beers; "Relation of Farm Adviser to County Horticultural Commissioner," W. B. Parker; "Inspection Methods," H. A. Weinland; "Future of County Horticultural Commissioner," G. H. Hecke; "Timely Hints," H. P. Stabler.

Afternoon Sessions—"Crown Gall and Hairy Root," R. S. Vaile; "Distribution of Injurious Insects," E. O. Essig; "Fumigation Methods," R. S. Woglum; "Pointers in Fungi," Prof. H. S. Fawcett; "Spraying and Fumigating—County Owned Machines vs. Contract Work," W. H. Volck; "Is Double Inspection Desirable," Geo. P. Weldon.

The evening session will be devoted to round-table discussion of subjects suggested during the day.

Special Potato Program

Tuesday, 10:30 P. M. (in Hotel)—"Cultivation of the Potato," E. H. Phreaner; "Fungus Diseases of the Potato," W. V. Shear; "Insect Pests of the Potato," William Garden; "Suggestions Called Forth at the Stockton Convention," Prof. S. B. Doten, Reno, Nevada.

State Fruit Growers

Tuesday, 7:30 P. M.—"Literature of the Farm," Mrs. Emily Hoppin; "Firing," J. E. Adamson; "Reciprocal Relations Between the County Horticultural Commissioner and the Nurseryman," C. W. Beers; "The Thermometer in the Orchard" (lantern), F. A. Carpenter.

Wednesday, 9:00 A. M.—Address of welcome, Louis M. Cole, president Los Angeles Chamber of Commerce; response, Dr. A. J. Cook; "The Work of the College of Agriculture Among the Farmers' Wives," Miss L. D. Clark; "Packing, Growing and Marketing Along the Atlantic Coast," J. H. Hale, Fort Valley, Georgia.

Wednesday, 9:00 A. M. (in Hotel Parlor)—"Semitropical Fruits Which Give Promise in California," F. O. Popenoe; "Semitropical Fruits," C. P. Taft; "Combating the Parlatoa Scale," A. J. Shamblin.

Wednesday, 1:30 P. M.—"Standardization," Prof. C. I. Lewis, Corvallis, Ore.; "Report on Standardization," Colonel H. Weinstock; "Uniform Horticultural Laws," M. McDonald, Portland, Oregon; "Marketing," Dr. G. Harold Powell.

Wednesday, 1:30 P. M. (in Hotel Parlor)—"Jelly Making," Mrs. Hilda B. Nielson; "Home Canning of Fruits and Vegetables," Mrs. Sara Roberts.

Wednesday, 7:30 P. M.—"Decay in Fruit," Prof. B. B. Pratt; "Farm Credits," Col. H. Weinstock; "The Mango" (lantern, F. W. Popenoe, Washington, D. C.; "The Scale Insects" (lantern), E. O. Essig.

Thursday, 9 A. M.—"Soil Hygiene," G. E. Bailey; "Trend of Opinion as to Soil Fertility," Dr. C. B. Lipman; "Review of Fertilizer Experiments at the University Station at Riverside," Dr. H. J. Webber, "Cover Crop Experiments," W. M. Mertz, "Root Stock Experiments," W. B. Bonns; "The County Horticultural Commissioner and the Farm Adviser," H. A. Weinland.

Thursday, 1:30 P. M.—"Soils," C. A. Jensen; "Water Requirements of Plants," J. W. McClane; "Fertilizing Citrus Crops," C. W. Leffingwell; "Review of Practical Experiments in Fertilization," Prof. R. S. Vaile.

Thursday, 1:30 P. M. (in Hotel Parlor)—"Women in Horticulture," Miss Kate Sessions; "Opportunities for Women in Horticulture," Mrs. Myrtle Shepard Francis.

Thursday, 7:30 P. M.—"Summer Cover Crop in Southern California Orchards," C. S. Milliken; "Pruning" (lantern), G. P. Weldon; "How to Develop Our State," Dr. T. F. Hunt; "Horticultural Quarantine and the Parcel Post," A. S. Hoyt.

Friday, 9:00 A. M.—"The Orange," C. C. Chapman; "Chemical Studies of Oranges," H. D. Young; "Production of Available Nitrogen in Citrus Soils," I. G. McBeth; "Citrus By-Products," C. P. Wilson.

Friday, 1:30 P. M.—"The Future of the Lemon," C. C. Teague; "New Fumigating Machine," G. P. Gray; "Fumigation," R. S. Woglum; "Newer Insecticides," M. R. Miller.

Friday, 1:30 P. M. (in Hotel Parlor)—"How Can a City Woman Make a Living in the Country?" Mrs. Emily

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Hoppin; "Home Economics for the Woman in the Country Home," Miss Ednah Rich.

Friday, 7:30 P. M.—"Citrus Insects in the Mediterranean Countries" (lantern), Prof. H. J. Quayle; "Melazuma of Walnuts and Citrus Gum Diseases in California and Florida," Prof. H. S. Fawcett; "Field Experiments," J. E. Prizer; "Walnuts," Carlyle Thorpe.

Saturday, 9:00 A. M.—"Orchard Data," G. W. Hosford; "Mexican Orange Fly," D. L. Crawford; "Pear Blight," E. A. Gammon; "The Pear Orchard," Hayward Reed.

Saturday, 1:30 P. M.—"Work of the State Insectary," Harry S. Smith; "Bud Selection," A. D. Shamel; Report of Committee on Legislation, C. C. Teague; Report of Committee on Resolutions, R. C. Allen.

Saturday, 7:30 P. M.—"The Fruit Awakening of the East," J. H. Hale; "Observations on Citrus Culture in California and Cuba" (lantern), Prof. H. S. Fawcett; "Types of Chlorosis in Plants," J. T. Barrett; "Mendel's Laws of Inheritance and Their Relation to the Breeding of Citrus Fruits" (lantern), Dr. H. J. Webber.

CITRUS CANKER

A Florida inquirer has written for information as to best procedure in the matter of citrus canker. We must first inform him that he comes to a state which has not yet had, and sincerely hopes it never will have, experience with this disease which seems to sweep out of existence every member of the citrus family once it gets started in a locality. Our inquirer's own state has now become thoroughly aroused as to the danger from this trouble and it is rumored that a lax state horticultural official has permitted the extensive spread of the disease. This, however, is doubtless due to lack of understanding of its serious nature.

As to treatment of the disease there seems to be none, other than to deluge the tree with oil, surround with straw and touch a match to it. This heroic treatment is given to entire orchards in Florida, more than 100,000 nursery trees and nearly 2000 bearing orchard trees having been destroyed.

The disease has secured a foothold in Texas, also in the vicinity of Mobile, Alabama; in Louisiana it has reached an advanced stage, at Lafayette—this as far back as 1913—while it is now thought to have been established there two years prior to that. There are a few scattering infestations below the city of New Orleans. The agricultural experiment station of Louisiana has issued Bulletin 150, which we presume our inquirer may secure if he will send postage. The Florida experiment station issues Bulletin 225, giving specific information regarding sterilizing field boxes, ladders or any other orchard appliance which is taken from orchard to orchard. The paragraph which describes the sterilizing solution is as follows:

Method of Sterilizing.

Several methods may be employed for sterilizing field boxes, but those which use a gas are slow and expensive. A dip of copper sulphate solution seems to be the most economical and practicable. A one per cent solution of copper sulphate kills the spores of most species of fungi (so far as tested.) In practice it will be safer to use a stronger solution, not less than five per cent, since the canker fungus is very resistant, and certain factors are likely to decrease the efficiency of weaker solutions.

A long, narrow, wooden tank can be provided, capable of holding two or three thousand gallons of the solution. The boxes can be passed in at one end of this tank, submerged, and passed out at the other end after remaining at least three minutes in the solution. Boxes thus treated will dry rapidly and will then be ready for use. The boxes should not be exposed to the rain until after they have thoroughly dried. Some objection has been raised to the use of copper sulphate on account of the corrosive effect it has on iron nails and hoops. A copper deposit will form on the hoops and nails, which will result in a gradual weakening of the solution; but the direct injury to the metal will be so slight that it need not be taken into consideration.

To make a five per cent solution of copper sulphate will require five pounds of copper sulphate crystals bluestone) and 95 pounds of water. Since water weighs about eight pounds to the gallon the required number of gallons can easily be computed. (One pound of copper sulphate to two and a half gallons of water is a close approximation.)

Bichloride of mercury, formaldehyde and other fungicides are not as effective as copper sulphate. Efforts to control by cutting out parts of trees are not effective.

As a final suggestion to our Florida inquirer we would add, do not temporize with this disease. Absolutely destroy every tree which shows infestation and in order to know whether or not it is in the neighborhood appeal to inspectors or those in authority who will aid in keeping it down. More specific information may be had by writing directly to the experiment station of the university of Florida, at Gainesville, and asking for Bulletin 225 or such other information as the station may have.

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A tip to those figuring on buying a deep well pump

First of all satisfy yourself as to the reliability of the firm that makes the pump, then find out the kind of service it is giving to those who have purchased one or more. Both of these points can be easily determined in relation to the Pomona Deep Well Pump.

We invite you to come to Pomona and find out for yourself the advantages of the Pomona Pump.

—see the Pomona Plant.
—see how the Pomona Pump is built.
—see the largest deep well pumping station in California.
—see how we meet the deep well pumping problem.
—study the experiences of those who have spent years of time and thousands of dollars in obtaining the present high efficiency.

If you cannot come to Pomona write for our pump catalog No. 54 "C" and state the depth of your well, etc.

Pomona Mfg. Co.
Pomona, Cal.
Los Angeles Office: 930 Investment Building, 8th and Broadway

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TREES & SEEDS THAT GROW IN YOUR STATE

I have several refrigerator cars of trees going to California this winter and can supply my many customers with my usual promptness. Apple, 7c, Peach, 7c; Plum, 16c; Cherry, 17c each, in regular California varieties. I pay freight on $10 tree orders. Large assortment of Fruit and Forest Trees, Grape Vines, Berries and Shrubs; all kinds of Garden, Flower and Farm Seeds. Large, well illustrated Garden Book free.

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Wholesale and Retail
Placentia Perfection —— Eureka —— Franquette —— Mayette
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2 cars redwood boards, new, per M.	16.00
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New redwood shingles. Per M.	$1.75
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PLUMBING	
Iron enamel bath tubs, complete with overflow and 4½ Fuller combination. Only	15.50
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WALL BOARD	
Former price $25; now	$19 00
Corrugated iron. New stock, per square; now	$3.75
Roofing paper; ready to lay; per roll	$1.00 up
Guaranteed house paints in all colors; per gallon	$1.50
Shingle stain and black graphite roof paint; per gal., 50c; in barrels, per gal	40c
SASH AND DOORS	
Five-panel Colonial doors, all styles	$1.00
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New full screen doors; Mission stain	$1.00

A full and complete line of new and second-hand sash.

See us for everything in Building Material.

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All Cars Transfer.

ALMOND APRICOT CHERRY TREES

Three great California Money Makers, for which the demand is steadily increasing.

We have a fine lot of these trees on all roots, and in all standard varieties — propagated from selected parentage. Our Foothill grown trees are of well toughened wood fibre, hardy, and have good, fibrous, deep-feeding, roots. All important features.

None better for profit, and you'll get the best trees grown if you order from us NOW.

The Silva-Bergtholdt Company
Fruit Tree Specialists
Box A Newcastle, Cal.

YOU CAN'T BUY POOR TREES FROM US.

NURSERYMEN'S CONVENTION

At the last moment advertisers have demanded so much of Cultivator's space that 13 engravings and a few notes of the recent state nurserymen's convention are forced over another week. Perhaps this is because we made the hoodoo number, but as there were some 30 or 40 people in the photos we thought that would overcome the jinx. Election will be over next week and everything will be smoother. And these engravings are surely of a bunch of handsome men.

EASY SCALE KILLER AGAIN

More than a score of years ago we recall the coming of certain agents with a sure cure for all kinds of insects and pests on orchard trees. It consisted of boring a hole to the heart of the tree and plugging with the cure-all which the agent had for sale, the supposition being that the substance was absorbed by the sap of the tree, making it so poisonous that all insects promptly disappeared. It was tried out, with the result that no one ever could observe any beneficial results. Some years ago the Los Angeles county horticultural commission investigated and cut down an apricot tree which had been plugged and filled about a year previous. The scale had not been destroyed, and on splitting open the trunk the original material was found in the hole, apparently in exactly the same condition as when first put there, with nothing to indicate that any of it had been absorbed by the tissue or the sap of the tree. An illustration showing the failure of this effort was used in the Cultivator at the time. However, now comes from an authentic source the following in a publication called "Science," and from an investigator at Stanford university. At first we thought it was intended for the humorous column, but from its tone and the character of the magazine in which it appears it is apparently intended as a serious proposition.

"An Experiment on Killing Tree Scale by Poisoning the Sap of the Tree

"I have in my grounds a plant of Spanish broom about a dozen years old and with a trunk about four inches in diameter which has for several years been seriously infested by cottony cushion scale (Icerya purchasi). I have tried various sprays, have put scale-eating beetles on the tree and at one time cut all the branches off and sprayed the trunk several times in the attempt to get permanently rid of this scale, but up to last winter it seemed that all attempts were in vain. In February of this year when the broom was very thickly covered with the scale I bored a ⅜-inch hole in the trunk to a depth of about three inches, filled the hole nearly full of crystals of potassic cyanide and plugged it up. In two days the scale began to fall from the tree and in a few days all appeared dead. Others hatched and attacked the tree, but lasted only a short time, and the tree has since been free from scale and very vigorous.

"At the same time I bored a similar hole in an old peach tree which seemed to have passed its usefulness and put a like charge of potassic cyanide in it. The tree has since seemed more vigorous than before and raised a fair crop of peaches. After feeding some of them to chickens and a rabbit with no apparent ill result, I ate some of the peaches, and could find nothing wrong with them. I have since put a similar charge of the cyanide in an orange tree with no apparent bad effect.

"It would seem from this experiment that it is possible in some kinds of trees, at least, to poison scale and sap-eating insects without injury to the tree. The method would seem to be especially adapted to killing various kinds of borers and insects which, like the pine beetles, burrow beneath the bark.—Fernando Sanford, Stanford University, Cal., September 3, 1914."

SEVENTH NATIONAL APPLE SHOW

Spokane, Washington, is making great preparations for its Seventh Annual Apple Show. An immense pavilion with three large auditoriums, 90,000 square feet in the heart of the business district of the city, will be used for the great exhibit. Secretary Corbaley writes that all the Northwest is joining in this great national exposition, and jolly old King Apple is sending invitations to everybody to come to Spokane in November.

Planters

NOW is the time for you to decide upon what you will plant this coming season; or, if you are not quite ready, at least inform yourself as to the nursery that is equipped to supply you with the best quality of stock.

In buying trees you must consider the experience, facilities and reputation of your nurseryman. The first cost of a tree is small, considering the expense of planting, irrigating, pruning, cultivating, etc., and it is necessary, therefore, to get trees that are true to name and which will produce the best results.

TREES

Fruit and Ornamental

We grow everything that grows—

APPLES PEARS PLUMS
ALMONDS LEMONS
NECTARINES PECANS
APRICOTS WALNUTS
OLIVES FIGS ORANGES
PEACHES PRUNES
CHESTNUTS
LOQUATS GUAVAS
POMEGRANATES CHERRIES
PERSIMMONS GRAPES
BERRIES, ETC.

Also a magnificent assortment of ornamental and evergreen trees, shrubs, plants, vines, palms, roses, etc.

Write Us Today

Get in touch with us now. We are glad to advise with you free of charge as to what will be most profitable for you to plant. Our 30 years' experience will be of value to you and costs you nothing.

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FANCHER CREEK NURSERIES INC.
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Scalefoe Kills

Red, Black and Purple Scale also the Red Spider and other insects, worms and bugs.

Does not hurt the plant or tree.

Quart, 20c; 2 quarts, 35c; gallon, 50c; 5-gallon can, $2.00, freight paid.

Special prices by the barrel.

Correspondence solicited.

West Coast Seed House
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Trees Trees

French, Imperial and Sugar Prunes, Bartletts, Clings and Freestone Peaches, Plums, Almonds, Apricots, Figs, Apples, Grafted Walnuts, Grafted Resistant Vines, Rooted Table Grapes, Spineless Cactus. Special prices on application.

TABLE GROVE NURSERIES
Healdsburg, Calif.

IRIS Illustrated catalog containing valuable information, and beautiful color plate, 15 cents
List with prices on over 200 varieties free upon request
THE DEAN IRIS GARDENS, Moneta, Cal.

Questions and Answers

THE EDITOR AND STAFF

Questions to be answered in this department should be received at this office one week before reply is expected. Write plainly on one side of the paper and sign full name and address. Unsigned communications receive no attention.

Market for Duck Eggs

Is there any market at Los Angeles for Indian Runner duck eggs? If so what places or class of people use them? Also what price do they bring? People around here claim the eggs are strong and unfit for eating, and the most of the stores won't handle them. Do the ducks moult more than once a year?—Subscriber, Centralia.

One large store in Los Angeles is now paying 30 cents a dozen for Runner duck eggs, while another is paying 47 cents. This shows the unevenness of the market. In the spring there is a greater demand than now, duck eggs sometimes bringing a trifle more than hen's eggs. The market for duck eggs for the table is very largely among Jewish people, and the producer will probably do better if he seeks a market catering to this trade. Sanitariums also use a good many because they are considered absolutely free from tubercular taint. Tastes differ in regard to their desirability for eating, but many persons think very highly of them. Ducks molt but once a year, in the late summer, as hens do.—J. A. K.

Name of Peach

What is the variety of peach, specimen of which I send?—Subscriber, Los Angeles.

The peaches were submitted to several. They so closely resemble the Sa'way that we are sure it is either that variety or a seedling from it. The color, texture of the flesh and flavor are all like the Salway. The cnly point in which it differs is the slight tendency to cling to the pit.

Poultry Greens

What line of greens suitable for poultry can be grown without irrigation in the vicinity of Merced?—Subscriber, Merced.

I am not familiar with the soil about Merced, but I know that no sort of greens will grow without water. Some require less than others, and some will grow in a subirrigated soil which would not grow in a dry, sandy soil. Where the winter rains must be depended upon for the entire water supply there is nothing better than rape. Mustard and all kinds of grains may also be grown in this way. I think kale would do fairly well in a subirrigated soil. When it gets a good start in early spring it can be kept through the summer with hardly any water. The same may be said of cabbage, which is a first cousin of kale, and probably of collards. Alfalfa, chard and lettuce require a great deal of water. Rape and mustard will grow wherever grain will grow, and rape is especially valuable where quick growth is desired. After it is six inches high a flock of young chicks can run on it for weeks without destroying the plants. Barley and oats, sown thick, and cut in a clover cutter when a few inches high also make good green feed.—J. A. K.

Katydid Eggs.

I send twig from apple tree. Please explain the scales on it.—Subscriber.

If our subscriber had kept the twig long enough he would ultimately have had about a score of good, healthy

(Continued on Page 426)

Shall We Elect Phelan or Knowland

to Represent California in the United States Senate?

President Wilson

James D. Phelan

WHAT JAMES D. PHELAN SAID OF WOODROW WILSON—

James D. Phelan says that Woodrow Wilson sits in the White House on guard, an ideal public servant, caring for the interests of what he calls the "voiceless body of the people."

From a speech delivered by James D. Phelan at San Rafael, September, 1914.

WHAT THE PRESIDENT SAID OF JAMES D. PHELAN—

President Wilson says: "I was most gratified to hear of the nomination of James D. Phelan for United States Senator. He has been in close touch with the Administration at Washington, and has heartily supported the policies which have been inaugurated for the benefit of the people, policies, which I am pleased to be informed, have met with very general approval."

From a letter written September 11, 1914, by President Wilson.

WHAT JOSEPH R. KNOWLAND SAID OF PRESIDENT WILSON—

Knowland charged the President of the United States, Woodrow Wilson, with secretly meeting emissaries of England on holidays and Sundays and implying that a trade with England was consummated which betrayed the best interests of the people of the United States.

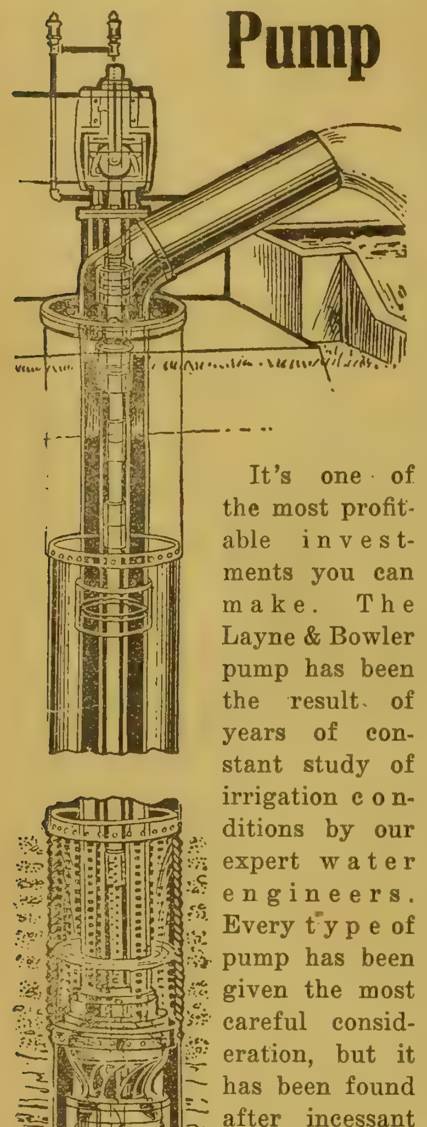
Speech of Jos. R. Knowland in House of Representatives, March 28, 1914.

WHAT THE PRESIDENT SAID OF JOSEPH R. KNOWLAND—

President Wilson said that the speech of Knowland was "just the crowning insult of a number of insults which had been introduced in that debate."

Press interview at Washington, March 30, 1914.

Which Man Can Best Serve You in Washington?



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It's one of the most profitable investments you can make. The Layne & Bowler pump has been the result of years of constant study of irrigation conditions by our expert water engineers. Every type of pump has been given the most careful consideration, but it has been found after incessant experimentation that the centrifugal multi-stage pump far excels any and every other type. Not only in theory is this true, but actual and practical tests have proven without a doubt the truth of the statement.

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Our Catalog No. 30 gives complete information. Write for it.

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LOS ANGELES, CAL.

Economics on the Farm

HOW THE EIGHT-HOUR LAW WILL AFFECT THE FARMER

By F. B. McKevitt

Extracts from address before Counties Committee of California Development Board meeting at Santa Rosa:

THE California farmer is opposing the enactment of the universal eight-hour law because the enforcement of such an act would mean his financial ruin.

The farmer's work is not steady and continuous in the sense that every working day in the year can be utilized in his business. In winter there are often long intervals of rain and storm during which no outdoor work is possible. Ground that is either too wet or too dry cannot be plowed, and much time is lost awaiting the right conditions. When they are right, the work must progress with all speed, and the limitation of an eight-hour day and a six-day week would very frequently prevent its proper preparation and completion.

It is presumed that in farm work a man's time would begin when he starts from the house to his work. If he is plowing, unless his team has been previously fed, watered, groomed, and harnessed by another employe, he would have all this to do before he would be ready to start for the field. Should this be done for him, and the team stand ready for him to drive away, even on a fair-sized ranch it would usually take from 15 to 30 minutes to reach the field, hitch up, and get to work, with an equal loss of time in unhitching and getting to the farm at noon, this being repeated after lunch and again at night, making a total loss of time in actual performance of labor of from one to two hours per day, so that an eight-hour day to the farmer would mean six, or at best, seven hours per day actual work. Farm work, especially in planting and harvest, cannot be done on such a basis, unless it were possible to run two shifts of men. This is not feasible nor practicable for several reasons: There are not enough workmen to be had at such times, as every farmer is busy, all wanting men at the same time, and two shifts would require the employment of twice as many as before; if the men were available, horses could not stand 16 hours of work, and it would be necessary, if the business were to be handled in this manner to double the equipment of stock.

Farming operations conducted with two sets of men and two sets of stock would show losses, giving "fits" to profits that are frequently so small that a powerful microscope is necessary to see them.

Many farms are located at considerable distances from market or shipping points. It may take more than eight hours to haul and deliver loads of produce, or if nearer, unexpected delays or accident may hinder the return. Under this law what would happen if the eight-hour day for the driver were ended when he was only part way home? Stop the team, tie to a fence, and wait for someone else to drive in? If not, and the same driver finished the trip, his unfortunate employer would immediately, in the eyes of the law, become a criminal, with both fine and imprisonment staring him in the face. Can anything be more ridiculous?

Under this law California would become a Mecca for every working man in search of short hours and our high wages for farm work, changing the present situation of a shortage of labor at harvest time to a surplus. What would we do with these men in the off season, when the demand for labor is at its lowest ebb? It would mean a large army of unemployed through the winter, with the bread line and the free soup kitchen an institution in every community—a condition distressing and repugnant to every right-thinking man.

Competition establishes prices. The California farmer meets the competition of the world. How could he do this working on an eight-hour basis with the balance of the world on a ten or twelve hour basis? There can be but one answer to this question.

Thus, we have three very good reasons for opposing this law; first, impossibility of getting work done on eight-hour basis; second, inability to meet competition of farmers of other states, and, third, sure losses instead of hoped-for profits.

So much for general farming. How about the dairyman, with cows that must be milked every night and morning, and on Sundays as well as week days? The same altruistic Socialist in whose fertile brain this industry-paralyzing measure was conceived will perhaps come to our aid and, by legislative enactment, produce an eight-hour cow warranted to require milking six days in the week only.

The fruit grower is worse off, if possible, than his fellow farmers. He is even more subject to the weather than they, and his crops are more perishable. His work is almost entirely in the open. As soon as the crop is off, pruning and spraying must begin, these operations leading up to plowing and cultivation, thinning the young fruit and harvesting the crop—all depending upon weather conditions, which sometimes shorten the working season by one-half. Ground must be plowed when in suitable condition as every farmer knows, and an eight-hour day would be too short to complete the work. If we could regulate the storms and the drouth on the Socialistic eight-hour and six-day basis, all would be well. These irresponsible, would-be philanthropists have not yet tried to legislate on the weather, however, so if the law is adopted we must struggle along against nature and do the best we can to reconcile her to the insane theory of an universal eight-hour day.

Ripening fruit must be picked when it is ready. A delay of a single day may unfit it for shipment. When the warm north winds come, it seems to ripen even faster at night than in the day. To limit at this time the hours of labor, or to say that for one day in the week no work shall be done, may practically confiscate a portion of the crop, may render useless that for which a year's endeavor and expense have been expended. If the fruit growers were all doing well, if their industry was making very profitable returns, these losses might be met and the businees continue, but unfortunately the fruit man does not always make money. His crops may be poor, frosts and insect pests sometime destroy, and markets are not always good. Frequently there may be no profit at all.

If these are the conditions now, what would be the result of increasing labor expense by not less than 20 per cent and decreasing available labor by at least 20 per cent more? In the fruit business practically all labor is hand work. About 40 per cent of the cost of moving fruit is covered by this item. With dried peaches selling at 3½ to 4 cents per pound, when actual cost is 5 cents, and the finest table grapes in the world bringing 65 to 80 cents per crate in the East, the cost of freight, refrigeration and package being 55 cents, it does not take an expert to figure where an increase of 20 per cent in cost would bring the shipper of peaches and grapes, two varieties which represent over 50 per cent of our Eastern fresh fruit shipments.

These conditions are so well known and understood by farm workers that there was no demand on their part for a universal eight-hour day. They did not ask for it, nor did organized labor in the beginning demand it. The idea originated with the Socialists, who prepared the petitions and secured the signatures thereto.

Is there any need for such a law for the protection of labor? It has never been urged that farm labor is unhealthful. On the other hand, there is no class which enjoy a greater degree of health and strength than farmers, whose occupation is almost entirely out of doors, and while theirs is not to be classed as easy work, it does not entail unusual or excessive demands on the strength. That the hours of labor are long will not be denied; that they can be made less is possible, but if farming is to prosper it would be only when they are made the same in every state of the Union.

CLINGSTONE PEACH TREES

California Cling Peaches, superior in size, substance, flavor and keeping qualities — the highest standard! The canning peach in demand by all the world.

TUSCAN — Ours are the IMPROVED ROUND TUSCAN. Firmer, more symmetrical, more uniform, finer grained, less subject to windfall and splitpit than the oblong Tuscan, commonly propagated, and preferred by canners to the extent of $2.00 to $5.00 per ton.

PHILLIPS—Preferred by canners to any other late variety—small but meaty—clear yellow to the pit. We cut our buds from a block of trees that are an exceptionally good strain of this variety.

Also all other standard varieties. You'll get the best from us—Tell us your wants.

The Silva-Bergtholdt Company

Fruit Tree Specialists

Box A Newcastle, Cal.

Foot-hill Grown Trees are Strong, Healthy, Well-rooted, and Produce the Best Fruit.

THE FRESNO NURSERY CO. INC.
TRADE MARK
RELIABILITY QUALITY SERVICE
FROM THE ROOTS UP

Think up your wants in the Nursery Stock Line for this coming Winter's planting and submit a list of your wants for quotations. We are headquarters for FRUIT TREES and GRAPE VINES, "Guaranteed From the Roots Up." Large illustrated Catalogue full of information, planting directions, etc., mailed free. Address:

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Perforated Tree Protector

The only Perforated Protector made; practically a small lath house about each tree, allowing the free circulation of air and mellowing the hot rays of the sun while giving perfect protection. No mouldy, smutty bark when using our wraps. WHEN DOES YOUR TREE NEED PROTECTION WORST? You know—while it is young and tender. Let us sell you Protectors. It's the best investment you can make after planting your trees. If your dealer hasn't them, send your order to us and we will fill it promptly.

Samples and prices furnished on application.

THE EXPAN CO., 935 E. Central Ave., Redlands, Cal.

EIGHT HOUR LAW NOT TRULY SOCIALISTIC

We give below communications from one opposed to the eight-hour measure and from one friendly to it, and the strangest part of it is that the one opposed to the bill is a socialist. We say, "the strangest part," though that should not be the case, for the socialist in the highest sense is one who is working for the good of all, and Mr. Berneike shows conclusively that from the true socialistic standpoint this bill will not work for the best interests of all. In this we agree with him, but for a different reason from his, for if this bill were in the interests of all it would not discriminate so much against the employer. It provides for punishment for only one of those who join in violating the law. The laborer may be as guilty as the employer in transgression of the law, and for him the law provides no punishment, and this is not contrary to the socialistic idea, we have never yet understood it.

There is much in the higher teachings of socialism which appeals to many of us who would see our country progress. We once heard President Gates of Pomona college in addressing an audience say in a half whisper, "You must not tell it to anyone else, but really I am somewhat of a socialist, but because of many unthinking socialists proposing so many impractical things true socialism has been discredited." We believe that just such measures as this eight-hour bill injure the socialistic propaganda. If socialism is going to win it must be just to both sides in any question at issue, but we will allow our correspondents to speak for themselves.

THE OTHER SIDE

Written for California Cultivator

By A. C. Masteller

It seems to me that your intense opposition to the establishing of an eight-hour law by popular vote is not consistent with modern progress and evolution. I can remember quite well when the average farm day was from daylight until dark, no matter what the season, and so-called chores were done by a lantern irrespective of the season. I am very glad to say that it is not so at the present time, and in view of the fact that the modern farm work is being done more and more by machinery, I think you are doing the workers and farmers themselves an injustice in opposing the bill. In our county, where the tractor is used very extensively, it is operated by three crews, eight hours each, and I am pleased to inform you that among the citrus growers of this community, of whom I am one, a very large number will vote for the eight-hour law. Also on the board of directors of Butte County Citrus Association, of which I am a member, there is a majority in favor of the law.

I was instructed once in a very impressive manner as to the division of the 24 hours of the day. I was told that we should divide it into three parts of eight hours each; one for labor, one for refreshment and sleep, and one for the service of God and our worthy brothers. Probably you have been told the same thing in the same way, I have no way of knowing, but any way I hope to be consistent and uphold the teachings of what is considered the greatest order on earth.

We will never arrive at a satisfactory condition of society so long as we must do it by considering our own selfish ends in every question that comes up. I can see that if the workers of this country were receiving 60 per cent of the product of their labor we would have an unlimited market for all our products. But when we see the workers, who are the consumers as well as producers, working for wages that do not permit of any luxuries it is no wonder that we sometimes get red ink for our returns.

EIGHT-HOUR LAW—YES OR NO?

Written for California Cultivator

By J. G. Berneike

I shall vote "No" on proposition No. 3, November 3d, but not because it is socialistic or because it has been proposed by a socialist. To offer this as an objection appears to me childish and absurd, and betraying lack of information and reasoning. In fact, in the case of very many intelligent people it would be almost a sufficient recommendation to know that the proposition is socialistic and has been proposed by a socialist.

If the proposition found favor only with the socialists, of course it could not pass. It will enlist many voters of other parties as well. But I wish to say right here, that I am a socialist and I expect to vote "No!" I wish to say that to vote on such a proposition is not a partisan question, and that no socialist is obliged to vote in its favor because it has been proposed by a socialist or because it is dubbed "socialistic." It is time we learned that through the initiative and referendum the state has become a wide legislative hall in which every voter has the right to make a motion and ask for its consideration and vote acording to his individual judgment.

The author of this law believes that this law will help the small farmer and help to break up the large land holdings.

Will it help the small farmer? That is for me to consider, because I am

(Continued on Page 420)

PEAR TREES

PLANT PEARS FOR PROFIT—and you'll get it.

The Panama Route gives to the California Pear Grower the markets of the world at less cost for transportation than the present rail route to New York.

Other pears cannot now compete with the California grown, and the profits have already begun to rise.

GET YOUR SHARE

We have a fine block of Pear Trees in Bartlett, Comice, Winter Nelis, Anjou and other varieties. We cut our buds from selected parent trees and propagate from the finest strain of BARTLETT.

WRITE US NOW

The Silva-Bergtholdt Company

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Better, stronger trees—Larger, finer fruit—Bigger Crops.

The Security Trust and Savings Bank has more than 88,000 depositors.

Think of it—as many depositors now as Los Angeles had inhabitants in 1890!

It shows how the public appreciates the great strength and superior service of the oldest and largest savings bank in the South-west.

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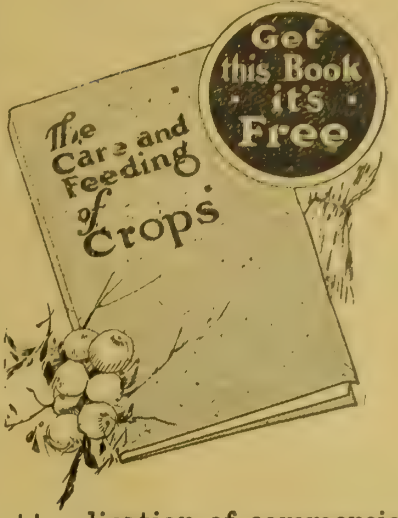
Int. on Term Savings Accounts

Write for full information about how to bank by mail.

SECURITY TRUST & SAVINGS BANK

SECURITY BUILDING
Fifth and Spring
Los Angeles

EQUITABLE BRANCH
First and Spring


Get this Book it's Free
The Care and Feeding of Crops

Maintenance of Soil Fertility

"There are three ways in which the essential plant-food may be added to the soil. These are the growing and plowing under of cover crops, known as green manuring, the use of barnyard manure and similar products and the application of commercial fertilizers——"

"Unfortunately, in the West, especially in unirrigated sections, the use of green manuring is limited by the lack of sufficient moisture, while the supply of barnyard manure and related waste products is, of course, insufficient to meet the demand.

These two types of manuring greatly improve the physical condition of the soil and are very beneficial. They should be practiced whenever possible, but, in order to supply sufficient of the available plant-foods to meet growth requirements and thus produce a large profitable crop, commercial fertilizers must be used."

This is a quotation from our book, "The Care and Feeding of Crops." You ought to get a copy at once. It contains most valuable information on soil treatment and crop raising.

Our "Gaviota Brand" Fertilizer supplies proper proportions of the Soluble and Available Plant-Foods, Nitrogen, Phosphoric Acid and Potash, to meet the Food requirements of the Plant throughout the growth period.

Write for our book, "The Care and Feeding of Crops," to-day. The knowledge contained therein may be the means of making a success out of failure in your crop raising.

The Pacific Guano & Fertilizer Company
Security Building
SAN FRANCISCO, CAL.

Catalogue

Holland Bulbs

Our Bulbs have arrived—all of them—better, larger, finer Bulbs than ever delivered before.

Our New Bulb Catalog

is now ready, describing all the latest novelties. The war has caused Holland bulb producers to send to us all those choice bulbs which were heretofore sold only in Europe.

Now is the time to plant bulbs—send for the book today; it also describes beautiful Pansies.

SWEET PEAS

Write for our Sweet Pea Catalog too, it tells how to prepare your garden, raise the finest blossoms—and shows by word and picture all about the newest varieties.

C. C. MORSE & CO.

125-127 Market St. San Francisco

The Largest Seed House on the Pacific Coast

SPRAYING AND IRRIGATION BOOKS FREE

Not mere booklets, but two complete up-to-date books, full of valuable data on these important subjects. No rancher should be without them.

228-238 Central Ave. SMITH-BOOTH-USHER CO. Los Angeles, Cal.

Farm Bureaus

IN THIS department we hope to give announcement of meetings of all farm bureaus in the state. These meetings are proving wonderfully beneficial, a roundtable for solving of many farm problems. We ask the aid of every farm adviser in the state in this matter.

Kern County

Kern County's farm bureau held its first annual meeting at Bakersfield, October 10, when representative gatherings of farmers met and organized, starting off with over 200 members enrolled and an enthusiasm for the work that is planned for the future. Fred H. Hall was elected president of the farm bureau, and other officers elected were as follows: C. H. Styles, vice-president. Directors — W. W. Phelps, E. E. Pyle, N. W. Taussig and George H. Peters. Farm Adviser R. R. Mack announces meetings for November as follows: Wasco, November 2, W. T. Fowler, director; Delano, November 4, R. H. Hiett, director; McFarland, November 6, H. L. Heard, director; Panama, November 9, A. B. Robinson, director; Rosedale, November 11, John Waters, director; Rio Bravo, November 14, F. W. Haage, director; Arvin, November 16, R. Haven, director; Tehachapi, November 18, L. T. Jenkins, director; Muroc, November 20, C. W. Robb, director.

Napa County

Farm Adviser H J. Baade writes: "At present the farmers are buying lime in carload lots, finding out that it is more satisfactory for the centers to work together and get the material in quantities. While our local dealers are always glad to cooperate with the farmers, yet it seems that lime can be handled most economically by the farmer himself, and as such, the centers are buying their lime through their own communities and are finding it more satisfactory. This county will probably buy from ten to fifteen carloads through the various centers this year. There are other cooperative movements now under way of which I shall gladly speak to you later.

"The following will be the schedule of the Napa County Farm Adviser for the month of November, 1914·

"Napa, November 2; Coombsville, November 3; Browns Valley, November 4; Salvador, November 7; Carneros, November 9; Fly District, November 11; Suscol, November 13. Directors of Farm Centers meet in Napa, November 14; Rutherford, November 16; St. Helena, November 18; Calistoga, November 20; Wooden Valley, November 23; Berryessa, November 25; Howell Mountain, November 27; Pope Valley, November 30.

"Pruning will be discussed at these meetings, also tree surgery. Anyone interested in these operations is cordially invited to attend. Mr. J. J. Fox, our horticultural commissioner, will be glad to attend any of these meetings where a few days' notice is given him by the director of the center."

San Diego County

Farm Adviser James A. Armstrong announces schedules of November visits to thirteen farm centers. Other centers will be visited in December, two communities combining in meetings each month, so that one month, for instance, the Encinitas center meets with the Del Mar center; the next month Del Mar meets with Encinitas, etc. The November meetings are:

Del Mar, November 2, Encinitas visiting; San Luis Rey, November 4, Vista visiting; Bonsall, November 6, Fallbrook visiting; Ramona, November 7, directors' meeting; San Marcos, November 9, Escondido visiting; Ramona, November 11, Julian visiting; Alpine, November 13, Dehesa visiting; Spring Valley, November, 16, Lemon Grove visiting; LaMesa Heights, November 18, El Cajon visiting; Jamacha, November 20, Jamul visiting; National City, November 23, Chula Vista visiting; Nestor, November 25, San Ysidro visiting; Mission Valley November 27, Poway visiting; Potrero, November 30, Campo visiting.

A great "Back Country Day" is being planned at Ramona, November 7. This is a directors' meeting, but others are invited. It is hoped to have a very large attendance. There will be addresses and demonstrations on use of dynamite. The domestic science department of the state normal school at San Diego will demonstrate the topic, "How to Feed the Farmer." An enjoyable feature of the meeting will be a basket lunch in a beautiful grove.

The committee of arrangement for the event is composed of W. E. Woodward, chairman; James A. Armstrong Henry Baldwin, Cecil Stockton, Mrs. H. A. Mills, Mrs. Dr. Scott and Mrs. W. B. White.

Alameda County

Farm Adviser W. H. Nixon, Hayward, writes:

"With regard to my work I have only been here a couple of months, and of course have as yet no results to tell of. Am devoting most of my time to preaching cover crops in the orchard districts; more thorough spraying and better care in the control of peach root borers. In the grain country am making a campaign for the use of better seed. The agriculture in this county is so diversified that each little district presents a problem entirely different from any other. Therefore am not able to undertake any work on a county-wide scale.

Schedule of visits for November: Hayward, November 2; San Leandro, November 4; Vastro Valley, November 6; Livermore (Murray Township Center), November 9; Pleasanton, November 11; Oakland, November 3; Irvington, November 17; Centerville, November 20; Newark, November 23; Niles, November 25.

Ventura County

Farm Adviser William B. Parker, County Court House, Ventura, writes: "The following is my schedule for the month of November; Filimore, November 2; Nordhoff, November 4; Ventura Avenue, November 6; Oxnard, November 11; Camarillo, November 13; Somis, November 16; Saticoy, November 18; Moorpark, November 19; Santa Paula, November 24; Simi, November 25."

San Joaquin County

Farm Adviser Frank F. Lyons, 223 East Weber Avenue, Stockton, sends us a copy of the first issue of "San Joaquin County Farm Bureau Monthly." This gives in brief form important facts as to humus getting, reviews of two new bulletins issued by the state university and announces coming meetings of the farm centers. The last page is given to the "Farm Bureau Exchange," where, under "For Sale" and "Wanted," are listed stocks, hay, implements, etc., for sale or desired by members of the bureau.

Schedule of meetings of farm centers up to November 18: Thornton, November 2; Lodi, November 3; Acampo, November 6; Lockeford, November 9; Linden, November 11; Escalon, November 16; Farmington, November 18.

SENSITIVE

Mistress—Why, Mary, isn't this your Sunday afternoon out? Aren't you going for a walk this lovely day?

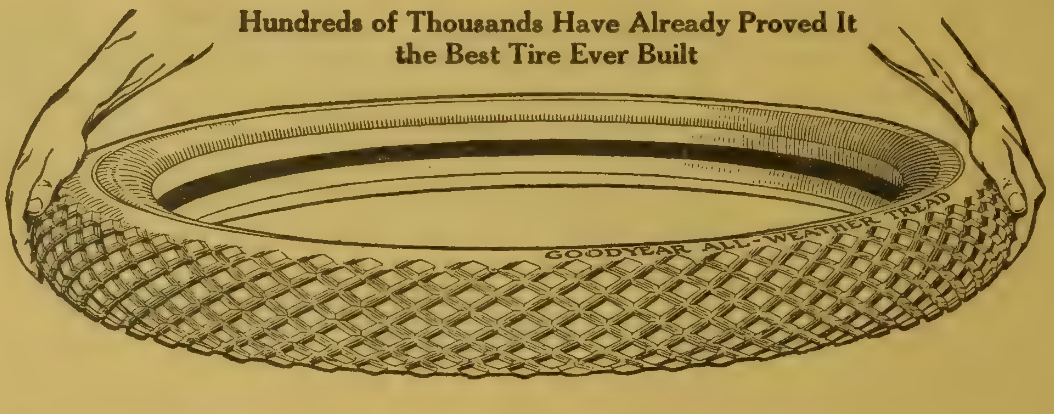
Mary—Please, ma'am, I'd rather stay in. You see most of the people out on a Sunday is couples, and I don't like to be conspicuous.—London Punch.

THE RECOGNITION

Friend—Hello, Pat! I scarcely knew you with your whiskers off.

Pat—The same wid me, me boy. I didn't know meself when I looked into the glass except by the sound of me voice.—London Telegraph.

Here's the Safe Tire
The Strong and Sturdy Trouble-Saver to Which You Are Bound to Come
Hundreds of Thousands Have Already Proved It the Best Tire Ever Built



Get Goodyears Now

Now—for fall and winter driving—is the time when Goodyear tires mean most.

On these tires alone come these All-Weather treads. They are tough and double-thick, resisting puncture and wear to the limit.

They are flat and regular, so they run like a plain tread. Yet they grasp wet roads with hundreds of deep, sharp, resistless grips.

For safety's sake—if for nothing else—every wheel should now be equipped with these ideal anti-skids.

You want to minimize blow-outs. We do that, at an extra cost of $1,500 daily, by our exclusive "On-Air" cure.

You want to combat loose treads. By a patent method—used in Goodyears alone—we reduce this risk 60 per cent.

No other tire employs one of these ways to combat your chief tire troubles.

Say You Want Them

The way to get Goodyears is to say that you want them. Any dealer will supply you. These are the ruling tires. They have won more users than any other tire. It is time that you know them. And now—when your tires face the year's hardest usage—is the time to find them out.

For your own sake, do it.

Your Other Needs

You also want a tire that can't rim-cut. That means the Goodyear No-Rim-Cut tire.

GOODYEAR AKRON, OHIO
No-Rim-Cut Tires
With All-Weather Treads or Smooth

THE GOODYEAR TIRE & RUBBER COMPANY, AKRON, OHIO
Toronto, Canada London, England Mexico City, Mexico
Branches and Agencies in 103 Principal Cities DEALERS EVERYWHERE Write Us on Anything You Want in Rubber
(1886)

WATER COMMISSION ACT, NO. 6 ON BALLOT

Written for California Cultivator by H. Culbertson

To the irrigators of the state the above act is a very important one. To the writer's mind it is not receiving nearly as much attention as its importance demands. The law is largely a copy of one that has been in use in Oregon for some years and has worked well. Colorado, Wyoming and other states have had excellent laws of this kind for years. California has no irrigation law in reality. If differences arise you go to court, and the party with the longest purse wins. The proposed law provides a law to begin with and appoints a commission of three beside the governor and civil engineer of the state to examine itno all differences in water right claims, rates, etc., and to settle the difficulty with minimum of expense. It may work some hardship to certain attorneys who fatten on water dispute cases. Under this law a person cannot file on thousands of inches of water and prevent any one else using water and not use it himself. Under the proposed law a person or company is allowed to claim the water actually used, but they cannot be dog in the manger and not allow any one else to use water they are not using. Many of the streams of the state have had water filings on them to several times the actual supply, yet only a small part is actually used. The proposed law authorizes the commission to examine into and settle the conflicts. Under it water claimants that make no effort to develop water, but simply hold on to it in hope of bleeding some one in a purchase who wants to use the water will be simply let down in favor of the one who actually uses the water. The law takes the water question out of the hands of the railroad commission and puts it into the hands of a water commission. This is well, because it has developed that the business assigned to the railroad commissoin is by far too great for one body of men. They have done nobly, but the water business of the state is big enough for one set of commissioners. Other states have found it abundantly large enough.

This law was passed by the last legislature and signed by the governor. It was fought in the legislature severely by certain interests. These interests are the ones that caused the law to come up for referendum vote in the hope that it would be defeated.

It is up to the friends of fair dealing to get very busy and get every voter possible to vote Yes on No. 6, the water commission act.

WHAT WE IMPORT FROM EUROPE

So many inquiries have been made since the commencement of the European war as to the character of goods imported from Europe that the Bureau of Foreign and Domestic Commerce has prepared a summary showing the principal manufactures and manufacturing materials received by the United States from its European neighbors.

Imports from England last year included nearly $20,000,000 worth of cotton goods; $9,000,000 worth of chemicals; $2,000,000 worth of coal tar products; 48,000,000 pounds of crude rubber; 48,000,000 pounds of hides and skins; 53,000,000 pounds of block tin; 75,000,000 pounds of wool; 14,000,000 pounds of tea; and a host of miscellaneous articles.

Germany is our chief source for imported chemicals, its contributions last year exceeding $20,000,000 worth. Other important articles received from Germany last year were; $13,000,000 worth of cotton goods; 150,000,000 pounds of wood pulp; 35,000,000 pounds of palm and palm kernel oil; $8,000,000 worth of toys. Certain food products were also imported from Germany, the leading items being 65,000,000 pounds of rice flour; 7,000,000 pounds of crude cocoa; and $2,000,000 worth of spirits, wines and malt liquors.

France is the largest source of our imported silk goods, art works, automobiles and wines. Last year we got from "La Belle France" $22,000,000 worth of art works; $5,000,000 worth of chemicals; $18,500,000 worth of silk goods, to say nothing of what we paid for cotton laces, embroideries, perfumeries, etc.

Italy supplies large quantities of macaroni, fruits and nuts, olive oil, prepared vegetables, cheese and still wines. Netherlands is a leading source for diamonds and wrapper tobacco, and also sends us hides, fish, spices and tin. Belgium is our greatesct source for diamonds and sends us much rubber, hides and furs and linens. Switzerland leads as our source of imported cotton laces and watches and is important in the matter of cheese, silk goods and coal-tar colors. Ireland is first in its supply of linens.

FARMERS' PROTECTIVE LEAGUE

The Farmers' Protective League of California was organized on a permanent basis at a meeting in Sacramento of delegates from 30 counties. Frank B. McKevitt was elected president; G. H. Hecke, first vice-president; Mrs. Emily Hoppin, second vice-president. Directors elected are: L. F. Graham, San Jose; George H. Cutter, Sacramento; C. C. Teague, Santa Paula; C. N. Hawkins, Hollister; K. S. Knowlton, Bakersfield; R. J. Cooper, Selma; James T. Boyer, Visalia; George W. Pierce, Davis; M. D. Wilder, Santa Cruz; J. W. Gulberson, Corcoran. Two directors representing the upper Sacramento Valley are to be appointed.

Roy L. Allen of Hollister was appointed chairman of the important committee on ways and means, and the other committeemen are James T. Boyer, E. N. Richmond, G. H. Hecke and Geo. H. Cutter.

The league proposes to be ready to oppose laws that are harmful to agriculture and as well to espouse laws designed for the benefit of all.

Now $985

Beginning with October, the 1915 Detroiter price is reduced to $985. Extraordinary demand has practically doubled production since the new model was announced July 25. Costs have been cut and overhead reduced. The total saving per car is now a fraction under $65. This saving goes to the purchaser.

Detroiter

$65 Rebate

Every purchaser of a 1915 Detroiter to date will receive a cash rebate of the above amount. This applies to cars now in the owners' hands, in salesrooms or in transit.

The new price takes in everything. There are no extras. Westinghouse starting and lighting system is included; one-man top; ventilating rain-vision windshield; non-skid rear tires; duplex tire-carrier; emergency search lamp; electric cigar lighter.

For $985 you own the biggest car at its price, the lightest car of its class—less than 2300 pounds. The only car in America with a long-stroke BALL-BEARING motor. The handsomest car built.

With fuel and oil at present prices, you can drive the Detroiter 10,000 miles for less than $100. No other FIVE-passenger car in the world can better this record.

There are 35 unusual Detroiter features that have brought this big demand—and cut the price to $985. Call on the nearest Detroiter dealer, and he will show them to you.

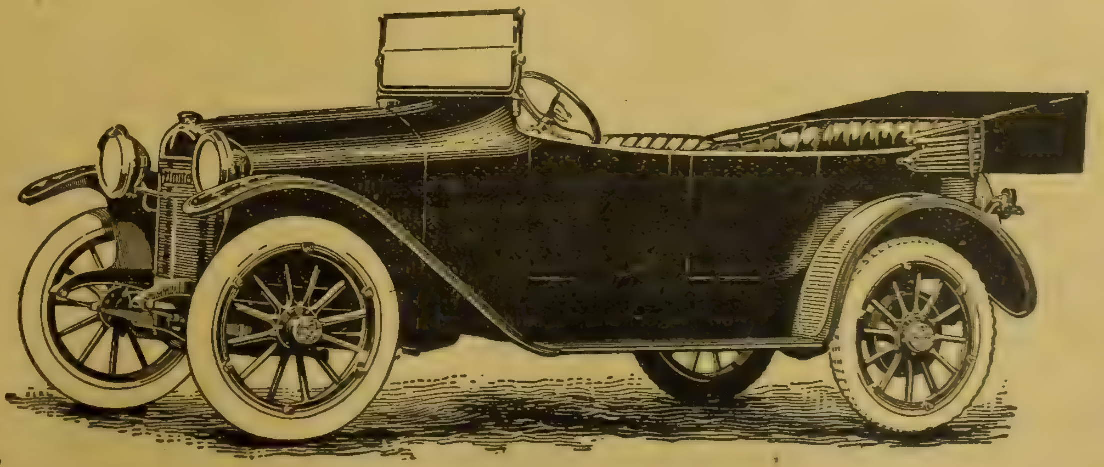
Write today for our beautiful new illustrated catalog, just off the press.

Dealers

Specify early if you want early delivery of this car.

Briggs-Detroiter Company

635 Holbrook Ave., Detroit, Mich.



Established 1889. Twenty-fifth Year.

The California Cultivator

Rural Californian combined with the California Cultivator

A Journal of Horticulture and Agriculture

By
THE CULTIVATOR PUBLISHING CO., Inc.
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R. M. Teague, Vice-President.
C. B. Messenger, Editor.

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J. Eliot Colt	Louis B. Stanton
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J. W. Mills	Dr. Wm. Petrie

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Copy for change of advertisements must be in the office on Saturday preceding date of issue. New advertising copy must reach the office not later than Tuesday to insure insertion.

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Thursday, Oct. 29, 1914

OUR ADVERTISERS RELIABLE

We guarantee our subscribers against loss through dishonesty of any advertiser in the Cultivator. We do not attempt, however, to adjust trifling differences between subscribers and honest, responsible advertisers, nor will we pay the debts of honest bankrupts. Notice of complaint must be sent us within 30 days from date of the transaction, and the subscriber must have mentioned the Cultivator when writing the advertiser.

WATER COMMISSION ACT

A referendum measure submitted to the people to vote upon next Tuesday, placed Number 6 on the ballot, is the water commission act. We have said nothing regarding the act during the campaign, but it certainly seems to us that the muddled condition of irrigation matters in California calls for some simpler method of settling questions which come up. Certainly it could be no worse for the poor man, and it might be vastly better for him to secure his rights before a commission under this act than in the courts where no case can be presented without great expense. We believe it an entirely safe proposition to vote "Yes" on No. 6.

FEED COTTONSEED.

With all other kinds of stock feed reduced in price it is possible that the live stock feeder may not stop to think that cottonseed meal is also selling at prices much below those usually prevailing. It is a good time to make liberal experiments in cottonseed feeding. The annual crop of the United States amounts to about 6,000,000 tons and this immense quantity is simply the by-product of the great cotton industry, though from the tonnage it would appear to be the principal crop of the cotton field. For every pound of cotton fiber or lint there are two pounds of seed which formerly was thrown away. Henry says that in his "Feeds and Feeding:"

"Cottonseed and cottonseed meal are among the richest and heaviest of feeds. When fed in limited quantity with a proper complement of other feeding stuffs, exceedingly satisfactory results can be secured with dairy cows and fattening cattle. Wet, moldy, cottonseed, or that which has heated, should never be fed."

BARLEY

The production of barley in the entire United States is estimated this year to be about 203,000,000 bushels. Of this amount California produces close up to one-fourth, or, to be more exact, 44,400,000 bushels.

In corn we do not make so much of a showing. However, it is somewhat of a surprise to learn that in this crop, of which we consider ourselves non-producers, we still produce 2,300,000 bushels. The entire United States produces considerably over two and a half billion bushels.

SOME GOLD.

The output of gold from the state of California for the year 1913 was $26,812,489, an increase of nearly a half million over the production of 1912, and in fact the greatest production in 31 years. For the sake of a bit of comparison of the worth of the mining industry with the fruit industry we may mention that oranges brought to the state several millions more than its gold mines and the best of it is that the orchards are ready for another year's production equally as valuable, and the lands occupied by the orchards are worth more today than before last year's millions were produced. This is not true of lands that are being destroyed to secure gold. Their productivity is gone forever once the gold is taken out.

If the next state legislature does not take some definite action to save these lands to our state it will be high time for the initiative to be invoked to stop their destruction. The country needs gold, but there are ways of securing it without destroying valuable and productive acreage.

GOING IN A BODY

The fruit growers of Goleta, headed by the chamber of commerce, announce that they propose to go to Los Angeles in a body to attend the state fruit growers' convention, badged and filled with enthusiasm for their own community, and root generally for Santa Barbara County. Commissioner Beers announces that he is doing some tall advertising and that Santa Barbara County proposes to capture the whole convention. It is also expected that the Claremont Pomological Club will contend with the Santa Barbara people for a bit of attention of the convention. And from the far north, while there will be no large clubs or organizations, there will be representatives of many. It surely will be a big convention.

The committee on arrangements has forwarded practically 35,000 pieces of advertising, and people from all over the state are fully informed of the good things which will be given at this convention. The committee has arranged for a most excellent parking ground for the autos of all who attend. The space is immediately around the assembly building and is almost perfect for parking purposes.

The greatest day of all the convention will probably be Thursday when some of the best talent in the country will discuss matters pertaining to soils. One of the best features on the program will be given by the ladies in their afternoon sessions which will be held apart from the larger convention in the parlors of the Hotel Clark, which will be headquarters. The Hotel Clark, by the way, is one of the most homey, comfortable hotels in California and will add to the pleasure of the convention.

LAND TITLE LAW

Every registered voter in California will soon receive, if he has not already, a book of 112 pages which will give all the proposed amendments to the constitution, referendum, initiative, and other measures. The full text of the bills will be in this book, together with arguments for and against. This will give but little over a week for electors of the state to familiarize themselves with these measures, though in the case of many like the eight-hour law, minds are already made up. But one measure which should have the careful attention of every property owner in the state is numbered 22 on the ballot. It is the land title law, an initiative act which requires several pages of fine type of the book to give the text. The argument in favor of the bill need not be given here, but we may say that careful thinkers who have made thorough examination of this bill assure us that it will result in simplifying and cheapening land transactions, and at the same time give assurance of titles far superior to anything now existing. Guaranty companies which are giving certificates of title are fighting this measure and are endeavoring to prevent the people from receiving relief. We would suggest that every voter read the arguments for and against this bill, and we are sure favorable consideration will be given to it.

EIGHT-HOUR LAW—YES OR NO?

(Continued from Page 417)

one of them. In my judgment this law will not help the small farmer, but place an additional burden on him. He has enough of them now. He takes the risk of getting a crop, takes the risk of getting a paying price after he has the crop, if he has a mortgage he pays a high rate of interest, which goes on, crop or no crop, price or no price. By having this law passed he would add to his burdens, facing a criminal suit at any time if in his own judgment he thought it necessary to save his crop by "requiring or permitting" his help to work overtime. It would, of course, be the prosecuting attorney's duty to prosecute every case of violation of the law. The burden of proof of his innocence would rest on the farmer (and when found guilty or innocent, he would have to pay a handsome fee to his defending attorney. Or if in the judgment of the court his judgment of the necessity of saving his crop by working his men overtime was not good, he would face a fine or jail term.

To employ two shifts of men when he had a hard time to rake up even one full shift is out of the question. With nine years of experience in drying apricots I believe I know whereof I speak.

Under the full sway of socialism it would still be necessary to take into consideration the uncertain elements of nature. And this would be done, too. Agriculturists would find their own rules and regulations for carrying on agricultural industries, and these would naturally differ from those of factories.

What may be excellent as factory legislation may be entirely inapplicable to the farm. I can see that the proposed law would work hardship at times even in a factory when it is necessary to fill a rush order. There is no way out at such times but to work overtime, because it is impossible to expand the factory at will, or obtain the necessary skilled help. Both employer and employe would lose if the rush order could not be accepted.

I shall vote "No" because I cannot afford to lose part of my crop for lack of sufficient help; I must try to produce all I can off the land I have (in accordance with socialist ideals), and suffer no part of my crop to be lost. I shall vote "No," because I do not want to see law suits multiplied and have the farmers fee(d) the lawyers and impoverish themselves. I shall vote "No," because I believe the law is not truly socialistic.

Agricultural News Notes

Experiments are being made in manufacture of vinegar from pineapple juice.

The annual meeting of the National Grange will be held at Wilmington, Delaware, November 11-14.

There is a hot fight on in Australia between manufacturers of oleomargarine and butter makers as to whether oleo may be colored yellow or not.

The application of the Illinois railroads for permission to increase grain rates five per cent has been denied by the Illinois public utilities commission.

The forestry commission of the Hawaiian Islands distributed 13,692 trees to the public in the month of July for reforestation of bare spots in the islands.

Throughout the national forests the rangers are posting the roads with permanent guide signs which tell distances and directions, especially at forks and crossroads.

The fruit most largely grown in Australia is the apple. Most of the output goes to England, but some shipments are made to Germany, the far East, South Africa and South America.

Advances will be made to cotton planters of Nyasaland in west central Africa on account of cotton which cannot be shipped owing to the war. Funds are supplied by the Council of British Cotton Growers' Associations.

The leading French horticultural paper, the Revue Horticole, recently announced that it would cease publication for the present, as its whole staff, editors, correspondents, clerks and printers, had been called to the front.

The spread of citrus tree canker in Florida, Alabama and Mississippi is very alarming to growers. Many urge burning of all affected trees to stamp out the trouble. Trees are covered with oil and burned as they stand.

The American Poultry Association, recently meeting in Chicago, established standard weights for Leghorns as follows: Cocks, five and one-half pounds; hens, 4; cockerels, four and one-half; pullets, three and one-half pounds.

The Percheron Society of America now recognizes 48 shows and fairs in the United States and nine in Canada. The total prizes offered for 1914 in cash, medals and cups, together with incidental expenses, will aggregate about $18,000.

A press despatch states that the federal railroads of Switzerland in August of this year, the month in which as a rule their earnings are largest, had traffic receipts of only $2,002,0000, showing a falling off of more than 50 per cent.

A large amount of government aid has been given to the agricultural population of Hungary. Various courses and lectures have been instituted, and the authorities have distributed gratuitously, or at cost price, a great number of appliances for fruit growers, as well as over 500,000 nursery fruit trees at reduced prices.

The opening of the Panama Canal has so increased water shipments of freight from the Pacific Coast that the transcontinental railroads have petitioned the interstate commerce commission to allow them to reduce rates to Pacific Coast terminals on 107 commodities sufficiently low to meet water competition without making a reduction in the rates on these commodities to the intermediate points.

Agricultural News Notes of the Pacific Coast

Northern California

Mendocino's apple show is being held this week.

Machinery is being installed in the new Gridley rice mill.

A single shipment of sheep from Chico to San Francisco comprised 34 carloads.

This has been a good Bartlett pear year in the Grass Valley district of Nevada County.

J. W. Guiberson of Corcoran has been elected president of the State Dairy Association.

The Agricultural Club of the Gridley high school recently visited the university farm at Davis.

There is a project on foot to place 60,000 acres near Colfax under irrigation from the Bear river.

Fifty-six carloads of Tokay grapes were shipped in one day, September 12, from Lodi, San Joaquin County.

The Creamery Operators' Association, in its recent meeting at Modesto, chose W. H. Roussel of San Francisco, president.

A stock raiser of Dixon, Solano County, has installed a boiler for steaming alfalfa and spineless cactus for feeding to hogs.

Professors True and Dolcini of the state university addressed farmers of Capay, Yolo County, on stock subjects at the recent farmers' institute.

Announcement is made of the projected establishment of a large potash factory near San Jose to supply potash formerly received from Germany.

Apple growers of the state met at Santa Rosa last Friday in response to a call by the state horticultural commissioner to consider standardization laws for apple packers. It is proposed to frame up a bill that may be presented at the next state legislature.

Central California

More than 1,000,000 cans of peas and tomatoes were sent out from the Oakdale cannery this season.

In the high school club's bean growing competition at Salinas Leslie Porter of Blanco was winner.

Grape growers of Madera County are being offered $14 a ton cash for Muscat grapes, to be manufactured into brandy.

Several large shipments of fruits and vegetables have been made from Turlock direct to Hilo in the Hawaiian Islands.

A farmers' institute was held in Delano, Kern County, Wednesday, October 21. Farm Adviser R. R. Mack was one of the speakers.

Representatives of the Visalia beet sugar factory met farmers of the Monson district last week to talk over sugar beet contracts for next season in that section.

The farm bureau of San Joaquin County met at Stockton Saturday, October 24. Dean Hunt of the state university was one of the speakers.

The first 500 head of cattle slaughtered from the alfalfa feeding plant in the Poplar district of Tulare County have proven the value of alfalfa as fattening feed for beef cattle.

Mr. G. P. Rixford, expert of the bureau of plant industry of the United States department of agriculture, has arranged to send offshoots of dates from the Imperial Valley to experimenters in the San Joaquin.

The government's campaign for extermination of ground squirrels in San Joaquin County has been so successful that farmers are considering a petition to the county supervisors to appropriate money to carry on the fight again this year.

Southern California

Sixty thousand cases of chilis is estimated as Orange County's output this season.

It is estimated that the bean crop of Ventura County will go over 1,000,000 sacks.

The Hemet Cured Fruit Association sent out a carload of dried apricots last week.

Bean thrashing outfits at Bardsdale, Ventura County, report beans going 40 sacks to the acre.

Election for the formation of the San Fernando irrigation district will be held November 10.

The Hemet Valley, Riverside County, had an inch and a half of rain the first of the month.

Ventura County bean growers expect to have their fields practically cleaned up by the 1st of November.

Ventura County's horticultural commissioner reports over 100,000 lemon trees imported into the county this season.

County Horticultural Commissioner White of Imperial is urging farmers to exercise great care in selection of alfalfa seed.

The county fair at Riverside last week was largely attended. One notable feature was the large exhibition of poultry.

One hundred women of Escondido, in San Diego County, are signing up to plant a mile of sweet peas within the next two weeks.

Willow Springs, Los Angeles County, has organized the Antelope Valley Improvement Club to work for the general interests of the valley.

A tomato grower of San Bernardino is reported as having made a big success with canning his tomatoes, for which there was little market fresh.

The Coast

Willcox, Arizona, is holding its agricultural fair this week.

The Arizona state fair will be held at Phoenix the week beginning November 9.

Nurserymen of Arizona met at Chandler on October 17 to organize a state association.

Grape growers of Yakima, Washington have been receiving $20 per ton for Concords.

It is stated that $1,000,000 worth of cattle will be shipped from the vicinity of Tucson, Arizona, this fall.

Phoenix, Arizona is planning for a Newcomer's Day this fall to welcome stangers to Salt River Valley.

Farm Adviser Barnes of the agricultural extension service of the University of Arizona, visited Sulphur Spring valley last week.

Farmers of Enterprise, Oregon, are getting ready for the fall seeding of wheat. Heavy rains have put the ground in fine condition.

The Seattle apple market is feeling somewhat encouraged by better prices. There are hopes that the Apple Week movement will increase sales.

An egg show will be a new feature at the annual of the Idaho state poultry and pet stock association, to be held at Boise January 4-9, 1915.

Fall seeding of wheat is well under way in Idaho. It is thought the acreage planted in winter wheat will be practically double that of last year.

The new cotton gin at Somerton, Arizona, has begun work on the cotton crop of Yuma valley. The cotton fields are promising a very fair yield.

Idaho expects to market 10,000 carloads of potatoes. The acreage is less than usual but the output will be practically as large as in former years.

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Agricultural Purposes

Nearly all lime used, no matter in what form, is prepared directly, or indirectly, from deposits of Calcium carbonate, chief of which is Limerock, from which our Ground Limestone is made.

We quote as follows from the Kentucky Agricultural Exp. Station, Bulletin No. 84, under heading "Lime for Agricultural Purposes."

> "Fresh burnt lime and hydrated lime may give better results the first year than ground limestone, but this is because of its caustic effects on the organic matter of the soil, causing a more rapid giving up of nitrogen. Experiments in Maryland and Pennsylvania show that used through a long period of time, the raw ground limestone gives the better results."

Our Ground Limestone is made from the highest quality limerock obtainable, and is ground to the proper degree of fineness recommended by the University of California.

You can get prompt deliveries from us either in bulk or sacked. Write us for further information, prices, terms, etc.

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MATHEWS ORCHARD DISC PLOWS

THIS is a simple and compact plow of few parts. Can be had either with one or two discs. Works close up to trees. Will penetrate the hardest soils and the heaviest cover crops without any tendency to get out of the furrow. The front furrow wheel is easily pivoted for turning to or from trees.

The strong simple construction of this plow embodies many attractive features which add to ease of operation.

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OLIVE TREES

OLIVES WORKED ON PICHOLINE ROOT have a stronger growing and deeper feeding root system than those grown from cuttings. Mission Olives worked on Picholine Root are more thrifty, grow larger, and are more heavily productive—that means more profit.

The foundation of your trees is THE important feature. In addition to working our Olives on Picholine seedling, we cut our wood from a fine strain of trees having a good record for productiveness and size of fruit.

In buying trees, you want the best—the first cost is no consideration. We have a limited number of Olives on Picholine. Write us now and reserve the trees you want.

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YOU CAN'T BUY POOR TREES FROM US.

NEWMAN BROS.' RANCH, ELK GROVE, CAL.

JUDGMENT based on EXPERIENCE is a sure GUIDE to success.

READ AND PROFIT BY THE FOLLOWING:

Poppy Ridge Ranch, Elk Grove, Cal., Sept. 26, 1914.

De Laval Dairy Supply Co.:

Are we pleased with our silo? We certainly are, and here are some of the reasons why.

It is made out of the right stuff, and in the right way for this climate. As you know, ours is the one you had at the State Fair in '13. It was moved down to the ranch and put up about October 1st. Stood empty all winter, was filled in April with alfalfa, empty by July, and filled again in September with corn. The hoops have never been touched. There isn't a check in it, nor has a single seam started.

We fed alfalfa silage three months in place of cutting and feeding green alfalfa every day. The cows milked just as well, we saved on labor, and the silo enabled us to turn into the best of feed a first cutting that, as hay would not have been worth handling.

We figure that the silo, by enabling us to preserve corn in a succulent condition for winter feeding, will so balance our ration that it will not be necessary to buy any concentrates to keep our herd up to their best. Even if it cuts our bill for concentrates 50 per cent. the silo will pay for itself this year.

It preserves the feed perfectly. We did not lose a particle of silage from mould even next to the doors.

We expect to fill it next spring with barley and vetch and again in the fall with corn, thus getting two crops in one season from the same land. We have not been able to do this before to advantage except with alfalfa. If this plan is carried out we shall need another silo for first crop alfalfa, and we serve notice now that the Ideal Green Feed Silo will be it.

Very truly yours,

NEWMAN BROS.

WRITE FOR CATALOG A

De Laval Dairy Supply Company

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SAN FRANCISCO

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EVERYTHING FOR DAIRY AND CREAMERY

Saves Your Horses
Saves Your Harness

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MICA AXLE GREASE

It's the mica that does it. It fills up the microscopic pores on spindles and sleeves and makes them smoother—better bearing surfaces. Mica Axle Grease is also economical. You use only about one-half as much as of any other axle grease. Get a tin today. Your dealer sells it.

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(California)

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WRITE FOR IT TODAY—

September, October, November
are three of the best months we have for PLANTING

Rhubarb and Cactus If planted now you should derive good results by spring

J. B. WAGNER—Pasadena, Cal.
The Rhubarb-Berry & Cactus Specialist

Live Stock and Dairy

COW TESTING AGAIN

Written for the California Cultivator
By F. E. Kaufman.

MUCH has been written the last few years relative to testing the dairy herd, but it would seem to the writer that no better time has appeared than the present for discussing this most important subject.

True, the price of alfalfa is so very low that many will say, "What is the use of going to all the trouble of weighing and testing the milk when the best cow feed that grows can be purchased for a song?" It will have to be a very poor cow indeed that will not pay her board with four and five dollar alfalfa, but the dairyman must keep in mind that it takes as much time to feed, milk and care for the cow as though he was paying 12 or 15 dollars a ton for hay. Then there is the value of the cow herself that must, or should at least, be taken into consideration.

Milk cows have practically doubled in value in the last three years and the outlook is for still higher prices. It has been a mighty poor cow that would not sell for $100 and from that to $160, while the writer has seen 18 months old heifers that would not freshen for six or eight months sold for $70. This statement has reference only to grades, for pure breeds have sold for two and three times that much money and have been worth every cent of it too for the reason that they have been tested and their dams before them have been tested, and further, they have been bred to sires whose dams have been tested, and there is no possible way for them to escape giving a good account of themselves if properly fed and handled.

In viewing a pure bred herd the prospective buyer first inquires as to the record of each individual, and then his curiosity—no, horse sense, is a better term—leads him to inquire into the records of the dam and granddam. Also he wants to know weight of milk and fat test of the sire's dam and granddam, and after he has made a careful study of all the records available he will be in a position to make his selections in a most intelligent manner.

If the keeping of such records is profitable, and it is, else they would not be kept, to the breeder of pure breds, why is it not profitable to the average dairyman who generally has an eye out for the improvement of his herd by selecting the best milkers and selling the others to his neighbors or the regular cattle buyer?

This alone should be sufficient to cause every dairyman to try and determine what his cows are doing, to say nothing of the advantages to be gained by knowing just which cows are making him money and how much.

A board with a sheet of paper tacked to it and properly ruled, hung up beside a spring balance at the milking place, and then a few minutes time to record the weights, and add them up at the end of the month, will do the business of keeping a milk record. Weighing the milk is the only true way to keep a record. How many times do you hear that "Old Brindle" gave a 14-quart pail heaping full last night when the real facts are that the pail would run over with 12 quarts in it and last night it was a full half-inch from being full, to say nothing of an inch or so of froth before you came to real milk? A 25 cent spring balance will do very nicely, although the regular milk scale, costing two to three dollars is better. Learn to think milk in pounds, but if you must know the result in gallons divide the number of pounds by 8.6 and your result will be gallons, which multiplied by four will give the number of quarts.

Ordinarily the creamery buying your cream will be glad to test samples of milk for you, and if you will take a composite sample of six to eight milkings about seven weeks after calving you will get an approximate test for your cow for that milking period. Then with your monthly milk record in pounds you can determine approximately the butter fat yield for the period of lactation and know to a certain extent if you are milking for the fun of the thing or for real dollars and cents. The better way would be to provide a Babcock tester and test once a month.

A composite sample of six milkings the last three days of each month gives good results and you will be better satisfied with the record at the end of the year.

A still better way would be to organize a cow testing association in your community and employ some one experienced in testing milk to superintend the weighing and testing one day out of each month at the farms of the different members.

Even though hay is cheap and the price of butter fat is low, do something and determine whether or not you were justified in paying $150 for that last cow purchased. You can at least find out if it will pay to keep the heifer calf dropped in much less time than it will take to have her become a cow and be fed and milked through two or three milking periods.

GOOD RESULTS FROM ANTI-HOG-CHOLERA SERUM

The treatment of hogs exposed to the risk of contagion from hog cholera with anti-hog-cholera serum has saved all but 2.27 per cent in the southern states, according to reports received by the United States department of agriculture from local agents engaged in demonstration work in this section.

These reports show that the county agents inoculated, in the year ending June 30, 1914, a total of 34,636 hogs that were in good health at the time but were exposed to the disease. Of this number only 787 died. This loss of 2.27 per cent is regarded as highly gratifying evidence of the value of the preventive treatment with anti-hog-cholera serum.

Although many authorities do not recommend this treatment after the hog is so sick that signs of the disease are plainly visible, the agents in many cases took a "fighting chance." The results would seem on the whole to have been very satisfactory. Including sick and well animals, a grand total of 41,974 hogs exposed to the disease received the serum. Of these 3,004 died, a percentage of loss of 7.15.

In considering these figures, scientists point out that the work was done under ordinary farm conditions and not by trained experts in laboratories. In addition a very large number of hogs were inoculated by veterinarians or by farmers themselves. In these cases no figures are available to show the exact results of the treatment.

Department experts also point out that inoculation alone is not sufficient and does not remove the necessity for sanitary and other precautions; for example, hogs should be fed for a few days after the treatment on cooling laxative foods. They should be removed to uninfected and clean pens where there is plenty of shade, and care should be taken to free them from lice and worms. Since many hogs are worm infested, the following formula, which has been used by local agents throughout the south with considerable success, is suggested by the Kentucky experiment station: Santonin, two and one-half grains; areca nut, one dram; calomel, one grain; sodium carbonate, one dram. This is a sufficient quantity for each 100 pounds of live weight. The dose should be given in slop in the evening after the hogs have been without food for from 12 to 24 hours. The following morning each hog should receive a tablespoon of epsom salts.

AMERICAN CHEESE SHOULD BE MADE POPULAR

American cheese makers are being urged by the United States department of agriculture to take advantage of the present excellent opportunity to establish a reputation for their product that will outlive the present disturbance in international commerce. European cheeses have long been popular in this country, and it is a popular belief that they cannot be equaled by the domestic product. For example, in the fiscal year, ending June 30, a total of 63,784,313 pounds of cheese were imported into this country. It is not yet possible to say to what extent this trade will be interfered with by the war, but it is certain that the imports for the current year will be much less than they have been in the past.

There is no reason why some of this deficiency cannot be made good at home if the farmers will furnish the milk. Already American cheeses have been made which rank in the opinion of experts fully as high as foreign cheeses of the same class. The popular preference for the imported product, however, has hitherto prevented these cheeses from selling on their own merits in competition with European products.

One of the most striking instances of this is Limburger cheese. In quality and price American cheese of the Limburger type long ago drove its foreign rival out of the market. Practically no foreign Limburger has been imported into this country for many years. Many consumers, however, have clung to the belief that they were eating a foreign cheese. There is no reason at all why they should not know that the American product is exactly as good as the foreign. Moreover now, that some of the more expensive types of highly flavored foreign cheeses are not likely to reach us for a long time, the demand for domestic Limburger should be greatly increased. The market thus created should remain a good one long after the present conditions have been remedied; for once the consumer becomes accustomed to the American product he is not likely to abandon it for a more expensive foreign one which is no more satisfactory.

Much the same is true of cheeses of the kind popularly described as Swiss. Cheese of this variety is made exactly as well at home as abroad. In the past, it is true, American makers have been confronted by several difficulties, but government investigations have solved many of these problems, and it is now possible for expert cheese makers to turn out Swiss cheese of uniformly high quality.

Camembert has been made in America with some success already. This variety has suffered more, however, from actual opposition by the promoter of the imported article than other kinds. Camembert is ripened quickly and reaches the consumer within a month of manufacture. This is, therefore, an opportunity for the American maker, freed from competition, to sell his article and by the fuller opportunity to work his factory, to perfect his method to such a degree as to hold that market when competition returns. Though more perishable than Cheddar, Swiss and some other varieties, this should not prove to be a serious obstacle to increasing the output, for Camembert of the best quality always commands a good price.

In addition to Camembert there are a number of other fancy foreign cheeses which are popular here and which could doubtless be imitated successfully by American cheese makers after a little experimental work. Among these varieties are Edam, Gouda, Parmesan, Roquefort, Stilton and Gorgonzola. Although there seems to be no reason why such cheeses should not be made in the United States, they do not in the opinion of experts offer at the present time the most promising field for American cheese makers. For the present at least it would probably be better for them to encourage the demand for standard types, such as Cheddar, Swiss, Limburger, pineapple, etc. The field for Cheddar is particularly promising because of the fact that the flavor of this cheese, while always distinctive, can be made to vary widely. This variation enables it to act as a substitute for a number of other varieties. In short the experts in the department of agriculture are confident that with care and foresight at the present time the American producers will do much to place American cheeses on a permanent equality with the European varieties and sweep away prejudice that has held back the industry in the past.

So long as the general public believes that the imported product is necessarily the best, the tendency on the part of the American manufacturer is inevitably to turn out goods that will sell because of their low price, not because of their high quality.

The best way to remedy this condition of affairs and to make friends for domestic cheeses of foreign type is for American makers to label their products frankly as American goods. This will give the consumers an opportunity to compare our best homemade products with the imported article. The result will be the removal of a long standing prejudice and an added incentive for manufacturers to improve the quality of their products. It is thought that this can be done and the price still kept below that necessarily demanded for imported cheese. But any temporary advantage gained by the present situation cannot be maintained unless American cheese makers work for quality of their products. Eventually, they will again be obliged to compete with Europeans who for generations have looked upon cheese making as a fine art.

THE WAR AND GUERNSEY CATTLE

The following clipping from the Guernsey Advertiser, published on the island of Guernsey, is sent us by Mr. Roberts, a Guernsey admirer at Oleander:

"The outbreak of war and the issuing of the royal proclamations prohibiting the exportation of foodstuffs, brought the Guernsey cattle trade with America to a standstill. Fortunately for the farmers and dealers the bulk of the year's trade was over. One consignment of 90 head was being made ready for shipment at the end of this month, and, if the war is over, there will be a shipment of 100 head in October, which would practically be the last for the year.

"The war may be almost regarded as a blessing in disguise for the cattle trade, for the number of animals that can be exported in any one year is limited, and more cannot be exported without reducing the stock that ought to be kept here, if the cattle industry is to go on.

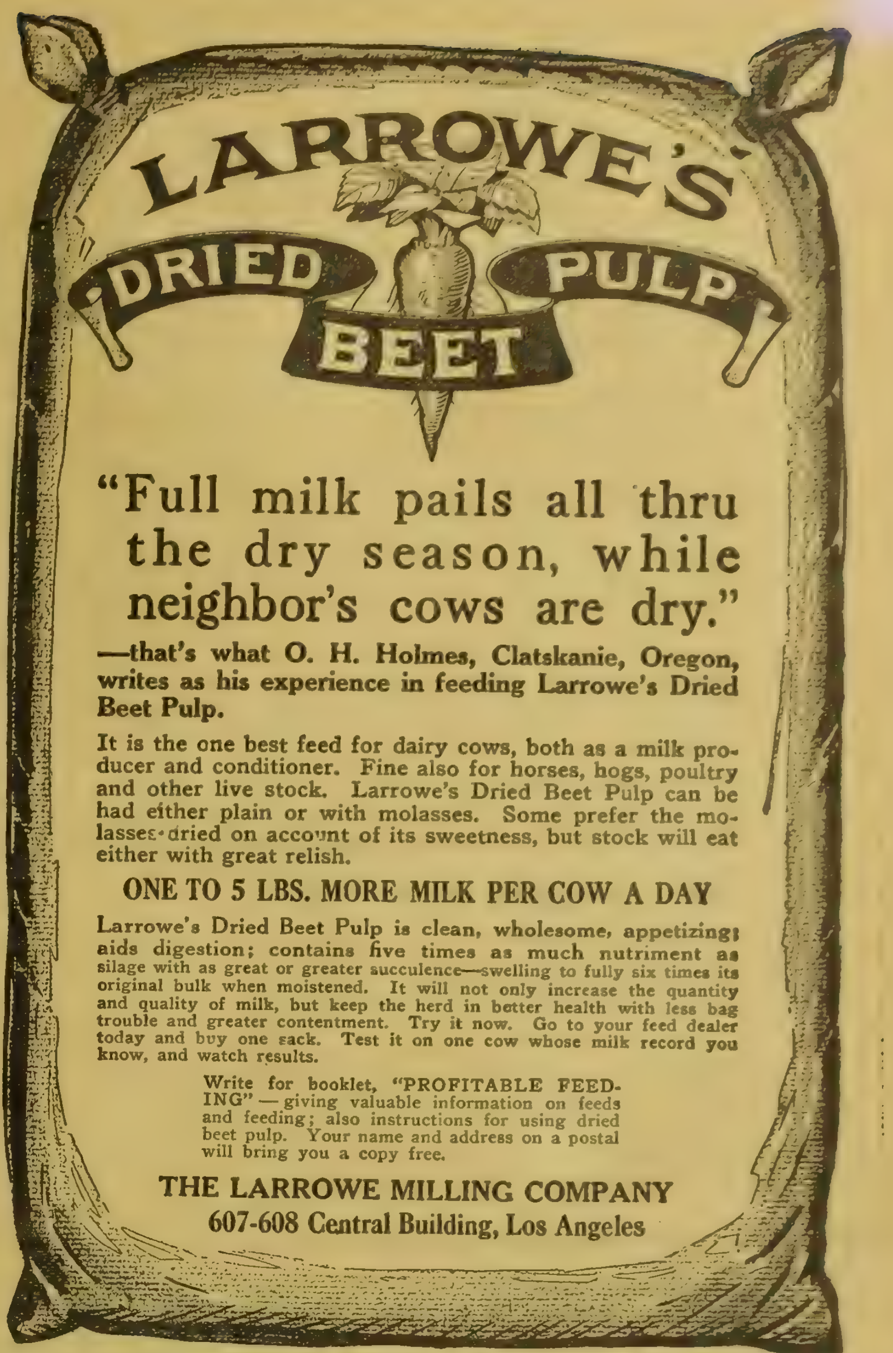
"The area available for cattle on the island is fast being restricted by the putting up of more and more greenhouses, and preserving the stock is becoming an urgent necessity. For the present the war is an artificial bar to the export of too many cattle.

"Up to this month some 700 head of cattle had been exported from Guernsey this year, representing a money value of at least £20,000. Another £5000 would be realized by the consignments held back.

"Every year there are about 3000 calves, of which half are converted into veal. Of the 1500 heifers, some 300 are required to replace the stock of cows, which have to be killed owing to old age or other causes. Another 300 may be regarded as unsuitable for export, owing to their having black noses or other defects or shortcomings, so that from 800 to 900 head is all that can reasonably be expected to be exported in any one year. With a total of 700 already sent away, it will be seen that up to the present those interested in the cattle export trade have not been seriously hit by the war, and in the end it may benefit by its effect in preventing too heavy a drain of the local stock.

"It is estimated that there are about 7000 head of cattle on the island. Not more than a dozen Guernsey cows, if so many, are killed week by week for food."

The boar needs pasture as well as do the other hogs or other stock.



"Full milk pails all thru the dry season, while neighbor's cows are dry."

—that's what O. H. Holmes, Clatskanie, Oregon, writes as his experience in feeding Larrowe's Dried Beet Pulp.

It is the one best feed for dairy cows, both as a milk producer and conditioner. Fine also for horses, hogs, poultry and other live stock. Larrowe's Dried Beet Pulp can be had either plain or with molasses. Some prefer the molasses-dried on account of its sweetness, but stock will eat either with great relish.

ONE TO 5 LBS. MORE MILK PER COW A DAY

Larrowe's Dried Beet Pulp is clean, wholesome, appetizing; aids digestion; contains five times as much nutriment as silage with as great or greater succulence—swelling to fully six times its original bulk when moistened. It will not only increase the quantity and quality of milk, but keep the herd in better health with less bag trouble and greater contentment. Try it now. Go to your feed dealer today and buy one sack. Test it on one cow whose milk record you know, and watch results.

Write for booklet, "PROFITABLE FEEDING" — giving valuable information on feeds and feeding; also instructions for using dried beet pulp. Your name and address on a postal will bring you a copy free.

THE LARROWE MILLING COMPANY
607-608 Central Building, Los Angeles

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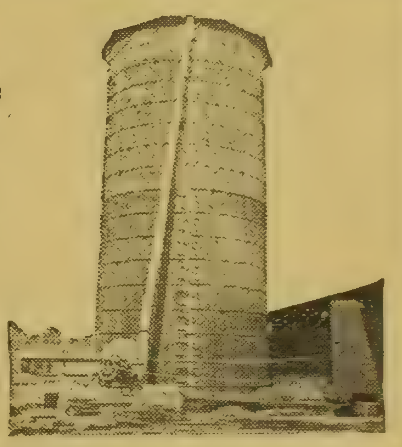
All sizes and dimensions made to order for your particular conditions.

This is a Photo of the 20x40 Redwood Stave Silo Manufactured and erected by us on the Sheldon ranch, Kenwood, California.



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From 500 to 500,000 gallons capacity.

Built to suit All Uses and Users. Cheaper than Metal Tanks, last 10 times as long.

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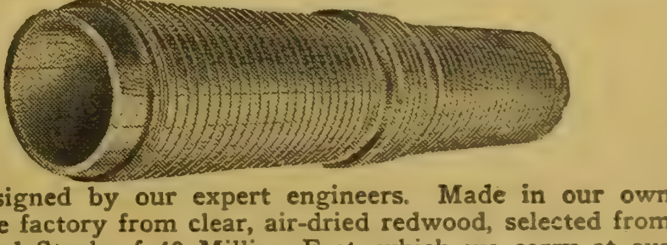

All Designed by our expert engineers. Made in our own immense factory from clear, air-dried redwood, selected from Air-Dried Stock of 40 Million Feet, which we carry at our plant at ALL times. Write Us for Prices.

Redwood Manufacturers Co.
Fully Paid Capital, $1,000,000.00
804 KOHL BUILDING SAN FRANCISCO

THE DAIRY CONVENTIONS AT MODESTO

(Continued from Page 411)

champion Jersey). Two-year-old bull—1, Owl of Belleview, Fred B. Wulff; 2, Pansy Gertie Lad, D. F. Conant; 3, Silver Marquis, W. W. Fisk, One-year-old bull—1, Toma's Altama Interest, C. D. Haworth (also junior champion Jersey); 2, Melia Ann's Butter Boy, Jr., Rancho Dos Rios; 3, Olga Anna's Fox, T. W. Cheney, Senior bull calves—1, Noble's Golden Laddie, J. M. Bomberger; 2, Victoria's Lad, D. F. Conant; 3, Senorita's Pogis, Rancho Dos Rios, Junior bull calves—1, Chris Dron, Rancho Dos Rios; 2, Zella's Rioter, F. W. Ellerby; 3, Nymphs Owl, W. W. Fisk, Aged cows — 1, Victor's Lady Dolly, D. F. Conant (also senior and grand champion); 2, Lorna of Venadera, Guy H. Miller; 3, Loretta of Venadera, Guy H. Miller. Three-year-old cow—1, Marie's Lady. Two-year-old cow—1, Gladys of Venadera, Guy H. Miller; 2, Dorn Sela, Rancho Dos Rios. One-year-old—1, Astrea of Venadera, Guy H. Miller (also junior champion); 2, Porilla, Rancho Dos Rios; 3,Yvonne of Venadera, Guy H. Miller, Senior heifer calf—1, Fontana s Dron, Rancho Dos Rios; 2, Constance of Venadera, Guy H. Miller; 3, Golden Lucy, S. F. Williams. Junior heifer calf—1, Infantina's Dron, Rancho Dos Rios; 2 and 3, Guy H. Miller. Best aged herd—Guy H. Miller. Best young herd and best calf herd—Rancho Dos Rios.

Ayrshires

G. B. MacFarland showed three bull calves.

Dutch Belted

U. G. Strader showed two bulls and five females. .

Guernsey

One yearling heifer was shown by O. V. Wilson.

Butter Prizes

The Creamery Operators' Association offered three cash prizes: $25, $15 and $5 for the best cubes of butter. These were awarded by the judges, Leon M. Davis, W. H. Roussel and John Sollie, to the following:

		Score
1,	W. J. Grinsell, Libby-McNeil & Libby, Loleta	95
2.	Hans L. Beck, Danish Creamery, Fresno	94¾
3.	Crystal Cream & Butter Co., Sacramento	94½

Peter Petersen of Ferndale, with a score of 94¼, was pronounced to have exhibited the butter showing the most perfect workmanship in the contest.

Other Scores

Ed Harper, Spreckels Market, San Francisco	94
F. H. Worthington, Holtville	93¾
M. Willing, Keyes	93½
Dairyman's Cooperative Creamery, Tulare	93½
Stanislaus Creamery, Modesto	93½
Stockton Creamery, Stockton	93½
Greenview Creamery, Ft. Jones	93⅓
Dairy Delivery Co., Gustine	93
Delta Creamery, Imperial	93
Simon Koppes, Montague	92½
Lucerne Creamery, Hanford	92½
A. Jensen, Castroville	92½
Ceres Creamery, Ceres	92½
Turlock Creamery, Turlock	91½
Minden Creamery, Minden, Nev	91½
Visalia Creamery Co., Visalia	91½
Visalia Cooperative Creamery	90
Burton Creamery, Ft. Jones	90
Riverdale Creamery, Riverdale	88

More About Butter Quality

W. H. Roussel of San Francisco says that the only solution of the quality problem is to so legislate that every one concerned, from the dairymen producing the milk to the buttermaker and the seller, shall be compelled to do their work properly. The uniformly good quality of New Zealand butter was cited as an example of legislative results. But free American citizens might consider such drastic regulations as restrictions upon their rights. Australian butter is now inferior in quality to New Zealand and also to California butter, and that nation has under consideration legislation similar to New Zealand's. When that goes into effect California dairymen must face a discount of two to four cents on their butter when in competition with butter from the South Pacific. This competition is keen in British Columbia and to a less extent in California and our own Northwest.

The slogan two years ago was: Pay the dairyman producing good cream a premium." But Sam Green now says: "Penalize the dairyman delivering poor cream." If the payment for cream is on a basis of butter market quotations it would seem somewhat easier to penalize than pay a premium. Penalize means pay less for the poor cream. Sam stated that California should find a good market for its surplus in Chicago and other eastern cities, for our production is greatest in the winter when the eastern production is least and their prices best. But we fail to take advantage of that market because we have so little butter of uniformly high grade, i. e., sufficient to make up carload lots on orders coming on short notice. Something must be done and some day something will be done, but probably not before our dairy interests are faced with more of a surplus production than now and an actual loss instead of profit to the producers. There is nothing like a sharp financial loss to bring producers in any line together.

Legislation

Mrs. A. G. Granpner came from the women's club circles of San Francisco with a cheering word. She had recently attended a milk conference in Berkeley, where various milk producing and consuming interests had sought to arrive at a mutual understanding. Both producer and consumer seem to have come to a common ground as to needed legislation and regulation. In fact that Berkeley conference must have been a real love feast where the lion and the lamb laid down together. One very promising feature is that little new legislation is really needed. There is enough on the statute books which if enforced will protect the consumer without injuring the finances of the producer. Mrs. Granpner, speaking for the mothers of San Francisco, laid down two requisites: (1) clean dairies; (2) general pasteurization. The first is now provided for in our laws. The second is common in San Francisco and Los Angeles, being practiced by all the large dealers, but it is a question whether the time is ripe for a law compelling it for all milk not certified.

One thing seemed evident, that the dairy interests do not want any bill introduced into the coming legislature like the two presented in 1913 and fathered by the state dairy association. It sought to repeal all former laws regulating milk production and inspection and introduce new and drastic methods. Some are so new and untried that both producer and consumer shy at them feeling that both may be worse off than before.

SANITATION

would have saved a great many of the 7,420,912 hogs valued at $59,455,700.00 lost in United States during 1913 from

HOG CHOLERA

You can make your hog pens sanitary if you use

KRESO DIP No. 1

The Standardized, Reliable Dip and Disinfectant.

We will send you free a booklet on the treatment of mange, eczema or pitch mange, arthritis, sore mouth, etc.

We will send you free a booklet on how to build a hog wallow, which will keep hogs clean and healthy.

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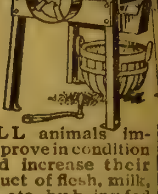

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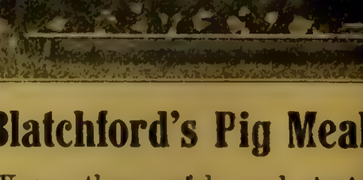

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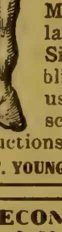

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Poultry for Profit

THE FALL EGG PROBLEM

Written for California Cultivator by Jean A. Koethen

THE secret of success with poultry is very largely the secret of getting eggs when eggs are dear, that is, in the fall. Producing eggs in the spring when every hen is laying requires neither skill nor knowledge, nor does it go far toward paying the feed bills for the rest of the year. The fall egg is the ultimate end and aim of all poultry keeping, the center about which all plans and schemes revolve.

Every spring matings are planned with the design of somehow catching that will o' the wisp. Every fall hears the same complaint, "Hens won't lay. What is the matter?"

Instead of asking "Why won't they lay?" it might be well to ask, "Why should they lay?" The jungle fowl never thought of laying in the fall. It was enough for her to lay a couple of dozen eggs in the spring. This gave her as large a family as she wished to raise. Why should she worry about more?

It is a far cry from the jungle fowl of the dim and misty past to the domestic hen of the 20th century with her record of 300 eggs a year, and yet one little word bridges over the whole of the distance, just one word, "breeding." The 20th century hen lays from 200 to 300 eggs a year because she has been bred to lay. Feeding aand care have gone hand in hand with breeding, but they would have counted but little except for the selection, year after year, decade after decade, of the best fowls. Perhaps the selection has not always been very intelligent. Very likely it has been in many cases the survival of the fittest. Nevertheless, somehow or other the domesticated, laying hen, with her more or less high productivity, has been evolved out of that insignificant ancestor. What has been done can be done again, and it will be more effectively accomplished because of some things we understand now which were not understood even 20 years ago.

Fall laying, it must always be remembered, is contrary to nature. Spring is the natural mating season for birds and animals. Mother Nature herself is back of it all, and it is not easy to change the nature of things.

Egg-laying is reproduction, nothing more, and it is said that the pullets and cockerels which are most strongly sexed,—that is, that show their sex earliest, are the pullets which can most easily be induced to lay out of the natural reproductive season, and the cockerels which will transmit this quality from mother to granddaughter. The question is an intricate and interesting one and worthy of the most careful attention of scientists and breeders.

This much we know, however, that there are ways of increasing fall egg production and that the first of these is breeding for eggs. It is possible by selecting year after year the hens that as pullets laid well in the fall and the males that are known to be sons of high producers, and breeding from them, to produce a race of hens that will lay in the fall. This has been done in many cases. It is done systematically on all commercial egg farms. It will be done more and more by amateurs as the principle becomes more widely understood. Perhaps the time will come when all hens will lay in the fall as they now lay in the spring. Then there will be no more high prices for fall eggs, and we shall all be trying to change nature again.

Breeding for Eggs

In order then to have fall eggs it is necessary to select the pullets that lay in October, November and December. This is best done by means of the trapnest, but it may often be done, though without absolute certainty, by selection according to certain signs which are generally believed to be the marks of a layer, such as activity, red comb, blunt toe nails, width in the pelvic region, loud singing, especially the distance apart of her pelvic bones. This last is a very good test. When on examination the pelvic bones of a pullet are found to be stiff and close together, you may be very sure she is not laying and has never laid. When the bones are so far apart that you can put two fingers between them, and seem elastic as well, she has commenced to lay. When she is laying well you can easily put three fingers bteween the bones.

Now the only trouble with this method of selecting layers is that it speaks only for the present, except in case of a very young pullet. When you find a mature hen with pelvic bones stiff and so close together that not more than one finger will go between them, you know she is not laying, but you know nothing about what she has done. Several examinations are necessary before you can judge of a hen's performance in this way.

Band the cockerels that are known to be sons of these early layers. There must be no guesswork about this, and the best way to do it is to put these early layers by themselves, mate them to a cockerel that you know is the son of a high producer, if you can find such a one, and keep the cockerels from this mating by themselves. When they are old enough to mate the best one will be head of your cockerel pen, or perhaps you will find it wise to keep two or three for this purpose in case one becomes ill or dies.

ADVERTISED MERCHANDISE

It is pretty generally admitted that advertised goods as a rule are more satisfactory than goods that have not been advertised. It is natural that this should be true.

The man who advertises his merchandise, stamps his name or the name of his brand upon them, and then claims that particular brand possesses unusual merit. He is on trial, in a sense, because everyone can read what he claims and can give his merchandise a trial, and if it does not justify his claims, the world will soon know it. He must make good.

The man who does not advertise is under no such obligation, as he has made no claims. He simply permits you to take your chance on their quality. They may be good and they may not.

It is reasonable to believe that the man who is telling his story to the whole world will be very careful of what his factory turns out.

Feeding for Eggs

But the most carefully bred hen cannot lay unless she has material from which to manufacture eggs; making bricks without straw was not a whit more impossible. She must have protein and water for the egg, lime for its shell and fats and starches for maintaining the heat and energy of the body while she works. She must have green feed to keep the digestive apparatus in running order and working smoothly, and grit to assist in grinding her food. More than this, she must have a variety of each kind of food, lest her appetite fail and she be unable to eat a sufficient amount to keep the machine working. There is a variety of good mash mixtures, all balanced, and no end to the grain mixtures, but they must all be mixed, as the farmer said, "with brains."

A moist mash made of vegetables, meat and ground grains once a day is a splendid appetizer and a little bit of a stimulant to laying. Green cut bone, when it is fresh, is the very best of egg makers. This may be fed twice a week, all the hen will eat at once. There is nothing better for starting the pullets to laying, but it must be fresh. Sometimes scraps of fresh fish may be bought from the fish man. When these are boiled with waste vegetables and the broth is thickened with bran and shorts, you have a meal that is most tempting to any hen.

Sour milk or buttermilk is one of the best egg foods. It may be set out in pans for the hens to eat as they will, but is rather more satisfactory when used to moisten the mash. At the Missouri station, where such excellent records have been made in the egg-laying contests, the dry mash is kept always before the pullets, and the same mash moistened with sour milk is fed a little after noon, just what the hens will clean up in a few minutes.

Cleanliness

It goes without saying that in order to do their best pullets must be free from all insect pests and must be housed in clean, comfortable quarters. A pullet that is constantly worried by lice cannot do her best. A pullet that is compelled night after night to submit to the tortures inflicted by thousands of blood-sucking mites cannot be expected to lay. Clean up first of all before you breed or feed or even dream of getting eggs. This is fundamental.

Exercise

The digestion of the material required for maintaining and running this egg machine which we call a hen depends very largely upon the exercise she gets. The laying hen is the working hen. The hen that will not work must be made to work. The muscular strength of her egg-producing organs, the digestion of her food, to a large extent her health itself, depend upon exercise.

Throwing a large part of the grain in deep litter and making the hen scratch for it whether she wishes to scratch or not is the one satisfactory method of inducing a hen to exercise. The grain need not be buried so deep that she must scratch all day. Perhaps it is better to give her a little at night without requiring her to work, just to be sure that she has all she needs. It has been estimated that a hen needs to scratch for about one-third of her feed, but this is a rather sweeping rule. Much depends on the hen, but it is better to make a hen scratch more than is really necessary than to let her grow lazy. Labor vincit omnia, they told us when I went to school, and labor for the hen is just as fundamental as proper breeding or feeding or comfort and cleanliness. They are all spokes in the wheel that keeps the egg machine going, and when you have learned how to make your hens lay when other hens are not laying you have nearly mastered the whole science of poultry culture.

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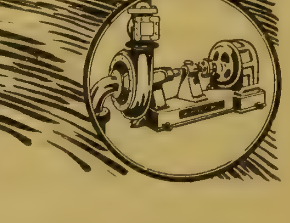

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QUESTIONS AND ANSWERS

(Continued from Page 415)

katydids hatch from these eggs. This is not the first time katydid eggs have started an inquiry and caused orchardists concern for fear it might be a new pest.

Intercrop of Grapes

Can Thompson's seedless grapes be grown successfully between peach trees? The trees are Elbertas and Muirs. The Elbertas are 24 feet apart and the Muirs 20. Trees are four and six years old. The soil is a sandy loam.—Subscriber, Laton.

We have seen vines and other crops planted between rows of peaches, and both gave good results. However this plan calls for extra care and water and fertilizer. The greatest trouble is that it takes nerve on the part of the orchardist to remove the vines in time to prevent injury to the trees. Peach trees at 20 and 24 feet apart, as they grow in California, use practically all the fertility in the soil, and if they have to divide up with grapes one or the other will suffer unless extra fertility is added. In the above we refer to trees in full bearing. If the vines had been planted at time of planting the orchard they would all be producing, and as the peach trees got older the vines could be removed, but if we were expecting to make the very best out of our peach orchard after it had arrived at the age of five or six years we do not believe we would plant vines as an intercrop. It is possible that some annual might be produced, one, two, or possibly three rows, for another year or two, and do no injury or even prove of value to the orchard if the fertility taken out by the crop is returned.

Sewage

I am desirous of installing a bathroom in my house on the ranch and would like to know the best way of disposing of the sewage. I have an eight-foot pit down to sand and water, well roofed with dirt so we plow right over it, into which the sink and stationary tubs empty, but do not like the idea of emptying anything else into it, although I know of instances where similar arrangements have been in use for a number of years and have given no trouble. However I prefer a better way if there is such.—Subscriber, Fresno.

If your pipe connecting the house with the eight-foot pool is trapped and has a vent so as to prevent escape of gas back into the house, and the pipe is large enough to carry waste from bathtub and toilet, with continuous fall all the way to the pool, there is no reason why the same pool should not be used for these purposes as well as for waste from sink and washtub. The writer at one time had a cesspool dug between eight and ten feet deep, into which an ordinary hogshead—one in which crockery had been shipped—was dropped to hold the sides from caving in. The top of this hogshead was practically two feet under the surface of the ground, then a shoulder was cut in the dirt all around the hogshead, 12 or more inches, and over the entire hogshead was a two-inch redwood plank cover. A vent was built to connect with this pool, the outlet running on a diagonal to the nearest orange tree, and the escape was up in the tree where there was no danger of injury from the cultivator. This was some distance from the house or it would have been safer to have had the vent much higher. The pipe connecting this pool with the house was vitrified clay pipe for some little distance from the house, but down through the orchard an ordinary redwood box built of three by four and four by four stuff was all that was used. Of course the fall was heavy, which gave rapid drainage. It would be safer where continual cultivation is necessary, instead of one covering of two-inch plank, to make one layer of two-inch and cross it with another, also of two-inch redwood. It should then last for years. Perhaps a better and safer way of securing a vent from the pool would be to follow the ordinary method of running a vent pipe even with the highest point of the roof, then with traps in the house there would be no danger of sewer gas. In case of solids filling such a pool, where the sides and top have been solid enough to permit of long life, a second pool may be built near it and a waste pipe connected one with the other. Where the pool is located in the orchard it is really beneficial, especially if the gravel subsoil is reached so that the ground surrounding does not become water-logged.

Roup—Chicken Pox

What is the cause and remedy for what is called the swell head in chickens? In old chickens the head seems to sweel, the eyes first and then the whole head. In young chickens the head seems to be covered with scabs. This disease seems to be among chickens all in and around this vicinity.—Subscriber, Visalia.

It looks as if your old hens had roup, but the young ones surely have chicken pox. For the old ones, try dipping the heads in a pail of water with a film of kerosene on top, a teaspoon of kerosene in a quart of water is ample. You can hold the heads under while you count 20 or 30, but be sure and don't hold them too long. If you prefer you can give them the permanganate of potash treatment, putting about a tablespoon of the permanganate in a quart of water and dipping the heads as directed above. Before you do this it is a good plan to press upward with the thumb and finger on the sides of the nostrils in order, if possible, to clean out the passages. A few drops of kerosene in the drinking water is sometimes a help. But treating roup is of no use unless you remove the cause. Are the birds sleeping in an unventilated house? Are they, perhaps, overcrowded? Maybe there are drafts through cracks or knotholes behind them when they are on the roosts. Perhaps there is dampness in the house from some cause or other. No use doctoring till you have found the cause and remedied it.

To treat the young chickens, first remove the scabs. You may prefer to soak them a little with warm soapy water first so that they will come off more easily. Then touch each sore lightly with a feather which has been dipped in creolin. Dr. Sanborn recommends calcium sulphide internally, one grain for each adult fowl, half as much for young chickens. Mix the drug in a little moist mash once a day. This is said to shorten the time of the disease and to keep the chickens that have not already taken it from getting it.—J. A. K.

NO MORE

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Thoroughbred Berkshire Boars of all ages from developed and large-boned hogs. Riccomi Bros., Mountain View, Cal.

Thoroughbred Doroc Jerseys for sale. Address Box 543, Lomita Rancho, San Jacinto, Cal.

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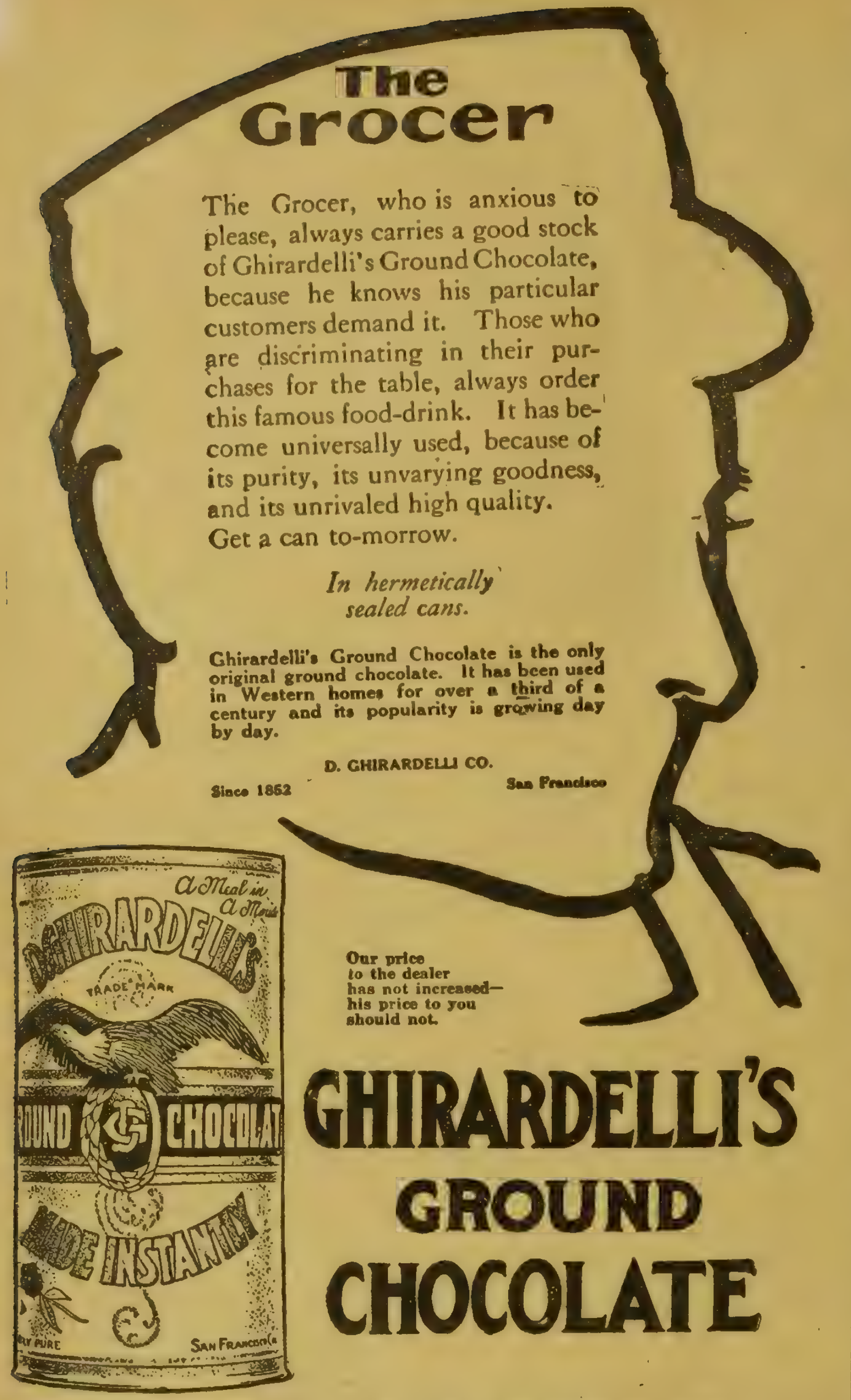
The Suisun cannery in Solano County is putting out a big pack of tomatoes.


The Grocer

The Grocer, who is anxious to please, always carries a good stock of Ghirardelli's Ground Chocolate, because he knows his particular customers demand it. Those who are discriminating in their purchases for the table, always order this famous food-drink. It has become universally used, because of its purity, its unvarying goodness, and its unrivaled high quality. Get a can to-morrow.

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Standard Oil Company
(CALIFORNIA)
Los Angeles

The Household Department

ANSWERED PRAYER

At first I prayed for Light—
  Could I but see the way,
How gladly, swiftly would I walk
  To everlasting day!

And next I prayed for Strength—
  That I might tread the road
With firm, unfaltering feet, and win
  To heaven's serene abode.

And then I asked for Faith—
  Could I but trust my God,
I'd live enfolded in His peace
  Though foes were all abroad.

But now I pray for Love;
  Deep love to God and man;
A living love, that will not fail,
  However dark His plan.

And Light and Strength and Faith
  Are opening everywhere!
God only waited for me till
  I prayed the larger prayer.
        —Mrs. E. D. Cheney.

IN SPITE OF MAGIC

(Cooncluded from last week)

But the hour of midnight was to be the crucial test of future partners for life. Apple parings might fall into all sorts of angles that would be mistaken or construed into any desired letters, but a face in a mirror—surely each contenance bore its own distinction, and there could be nothing but plain magic in that test.

Cornelius grew hot and cold as the hour approached. He had scarcely a word with Mary Finn, so absorbed was she in her duties as hostess.

At ten minutes before midnight the girls withdrew to a bedroom, from whence issued much giggling and pushing about and sudden shrieks of laughter. Mrs. Finn ambled to and fro in friendly banter with the waiting young men in the parlor.

"No cheating, boys," she warned, her voice shrill above the vigorous singing of Mr. Christopher Brady at the piano. They laughed good naturedly and joined in the chorus of "She Said She Loved Me, But Now She Loves Another Fellow," and something in the air stuck in Cornelius' memory and could not be eradicated for many a day.

"I don't see where we fellows get any fun out of it all," growled Mr. Brady, whirling around on the stool. "I wonder if I couldn't let down my hair and run around with a hand mirrow—what do you think I'd see, eh?"

You'd see a conceited puppy!" joked Mr. Finn, slapping Mr. Brady's broad shoulders with easy familarity. "Let me whisper a secret, Chris—excuse me, gents"—he bent down and whispered in Mr. Brady's red ear, while that gentleman nodded mirthfully.

Sure, I'll do it. I'm on. I thought maybe there was something more! Have a cigar, Mr. Finn." He followed Mary's father into the kitchen, and Cornelius sat silently, alone, envying the easy manners of the big Mr. Brady and his apparent intimacy with the Finns. Did this friendliness portend some bond between Christopher Brady and Mary Finn?

Cornelius grew wretched as the time passed. Mary must soon make her test of fate in the gloomy hall. When would he know if it was his own face she had seen over her shoulder? Would she tell it to the assembled company or when his questioning glance sought hers? Desperately he calculated the chances that fate held for him, and he admitted they were very few indeed. Everything he had ever gained he had had to struggle for, as had his father before him. He had fought tooth and nail for his position as office boy in the beginning, and he had fought his way up to his position as shipping clerk by sheer force of will and pluck. In his practical experience he had never called upon luck or fortune or fate to aid him in his climb. He just planned what he wanted and then worked up to it. It had proven a good method in the past.

Now he wanted Mary Finn. If he won her it must be by his usual methods. He must not trust to chance nor to any other doubtful means. There was no time to fool with luck or the magic sorceries of Halloween. He must have Mary Finn in spite of magic, in spite of Christopher Brady, in spite of everything.

Then it was that a daring thought came to Cornelius Babcock—daring because he was unaccustomed to intrigue or fighting in the dark, and this game called for darkness. Leagued against him were Christopher Brady and his intimacy with the Finns,and also on the opposing side were the chances that Cornelius would not win. So he resolved to fight for what he wanted—for Mary Finn.

Mr. Finn entered the parlor and lifted a hand to the chandelier. "I'll be dousing the light, boys," he warned. "Everything's got to be dark as your hat. Out she goes!"

In the thick velvety blackness that followed, Cornelius stepped, swiftly as a cat, across the floor to the door that led into the corridor. It was ajar and he pushed it open, slid around it and entered the hall where he felt his way into the embrasure of another door and waited, his heart pounding heavily.

Mary Finn would soon come down the hall, her fair hair swinging loose, her sweet face peering in the mirror's depths for the face of her true love. And Cornelius would be there, looking over her shoulder, his eyes meeting hers in the candlelight—settling their futures at one blow.

A door opened, and with muffled shrieks a slender form came into view holding a lighted candle before her. It was Mary Finn!
advanced. She looked so much like an angel, with the mist of hair about her angel, with the midst of hair about her shoulders and her eyes fixed timidly on the glass, that he almost forgot the role he had selected to play.

As she approached his hiding place Cornelius braced himself to overcome the shyness that began to steal over him. Here was his opportunity to forestall the goddess of chance—he would win Mary Finn in spite of magic!

As she passed he leaned forward and peered over her shoulder just as a dark shock head leaned from the opposite doorway to perform the same service. Their heads bumped vigorously, were withdrawn and then met

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in growling threats. Mary Finn turned with a frightened cry.

"Whatever is the matter? Why-y!" She stared at the two rivals with mirthful eyes.

"Did you see my face, Mary?" snapped Cornelius sharply, aware that he had suddenly attained manhood. "Didn't you see my face first?"

She flushed and nodded with downcast eyes. In the gloom her hand stole into Cornelius' outstretched palm.

"Ah-h-h," growled Mr. Christopher Brady sourly. "You saw my face in the glass too! How about me, eh?"

"Maybe you're going to be my second husband, Chris—if anything happens to Corny—but I hope nothing happens!"

And Mr. Brady had to be satisfied with that arrangement.—Ex.

IDEAS FOR THE COOK

Written for the California Cultivator
By Isabel Cottle

Breakfast

Cream of Wheat with Stewed Berries
Broiled Ham Banana Fritters
Coffee

Lunch or Supper

Sliced Roast Beef Tomato Cakes
Creamed Oyster Plant
Warm Gingerbread Tea

Dinner

Liver Rolls Delmonico Potatoes
Creamed Green Corn Chopped Pickle
Graham Rolls
Favorite Cake Coffee

Delmonico Potatoes

Melt ¼ pound grated cheese in 1¼ cups white sauce. Arrange diced, cold boiled potatoes and white sauce in alternating layers in buttered baking dish. Cover with buttered crumbs and bake until brown.

Liver Rolls

Dip thinly sliced calf's liver in boiling water, then in flour, and salt lightly. Place on each slice a spoonful of dressing made by crumbling fine one-half loaf stale bread, seasoned with salt, pepper, onion salt and sage. Moisten with a very little hot water (do not make soggy). Roll the slices of liver around the dressing and fasten with toothpicks. Brown on all sides, then place in pan in oven, add a little boiling water, cover and steam for 15 to 20 minutes, leaving off cover last five minutes.

Tomato Cakes

Take one cup of canned tomatoes, two eggs, one dozen soda crackers rolled fine. Season the tomatoes and mash with half the crackers, add the eggs and beat smooth; add the rest of the crackers and form into small cakes. Drop into a hot buttered griddle and fry a nice brown.

Favorite Cake

Cream one cup butter until soft with 1½ scant cups cane sugar and juice of half an orange. Beat until creamy, then add one-third cup cold water from the one cup used in cake. Next add one cup flour that has been sifted three times with two tablespoons cornstarch (do this with each cup). Beat in long strokes, then add a little water and the second cup of flour. Beat, then add the rest of the water and the third cup of flour with two heaping teaspoons baking powder. Beat again, and add well-beaten whites of four eggs. Bake in layers. Flavor with vanilla and orange.

Filling

Whip one cup of cream. Beat the whites of two eggs to a stiff froth. Beat one-half cup of powdered sugar and the yolks of the eggs together and flavor with half a teaspoon of vanilla. Put all together and add one cup of chopped blanched almonds, or stoned and chopped prunes, raisins, dates, or other fruits.

MAKING OLD THINGS NEW.

A little oil or varnish on the old furniture will work wonders. There are many prepared furniture polishes which are excellent. Combined with care and elbow grease they are unequalled for brightening the home. Neither is plain soap and water to be disregarded.

It is just plain foolishness to borrow trouble when it is so easy to make it.

THE STRENGTH OF THE STUBBORN

How much perfectly good, serviceable will-power people waste in mere obstinacy! Martha Malone, after working three years for Mrs. Bixby, appeared one morning at Mrs. Wilson's back door and applied for a place.

"Why," said the surprised Mrs. Wilson, "I thought you were working for Mrs. Bixby!'

"I was, mum. But I've quit."

"Is that so?" Mrs. Wilson could not conceal her surprise. "I thought you liked her."

"Indeed I do, mum."

"And I'm sure she liked you."

"I believe she did, mum. Leastwise she always seemed to."

"Well—" Mrs. Wilson was still wondering what the trouble had been.

"Well," said Martha, seeing that some explanation was expected, "you see it was like this, mum. I always put the blue china plates on the right-hand side of the cupboard, and this morning the missus comes along, and moves 'em, and says, 'Martha, every mornin' for three years you've put the plates on the wrong side, and I ve had to come along and move them—and I can't stand it any longer.'

"And," said Martha, "I says to her, 'Mrs. Bixby, every mornin' for three years I've put them plates in the right place, and you come along and moved them, and then I had to come along and move them back, and I can't stand it any longer either.'

"And so I quit."—Youth's Companion.

It is simple to minimize kitchen drudgery if one will go about it in the right way. It is not necessary to rub and scrape pots and pans until the arms ache and the hands are raw. A little five-cent hand scrub and plenty of salsoda, which can be bought for a cent a pound, will do the work. As soon as a meal is cooked and served, remove as much of the grease and food from the pans as possible with a knife, then fill them with hot water, put in a few lumps of the soda and let them boil or stand a while, when a light scrubbing with the little brush will remove all dirt and grime which has been softened with the soda. Then wipe them off with a clean, dry cloth and set them upon the stove to dry.

In the press of household cares, no matter how many temptations occur to neglect it, the proper setting and appointment of the table should never be overlooked. It ought to be a matter of pride with every housewife to see that her table is properly set and the food nicely served. If carelessness is once allowed to creep in and things begin to go at loose ends at the table, the family's table manners begin to deteriorate. When their table manners begin to go their other department will soon follow in the downward course. The table setting should be just as punctiliously correct for the family alone or even for one individual as for a royal banquet.

Tomatoes with the skin removed and hollowed out, then filled with minced fish or chicken and a little mayonnaise, make a delicious relish.

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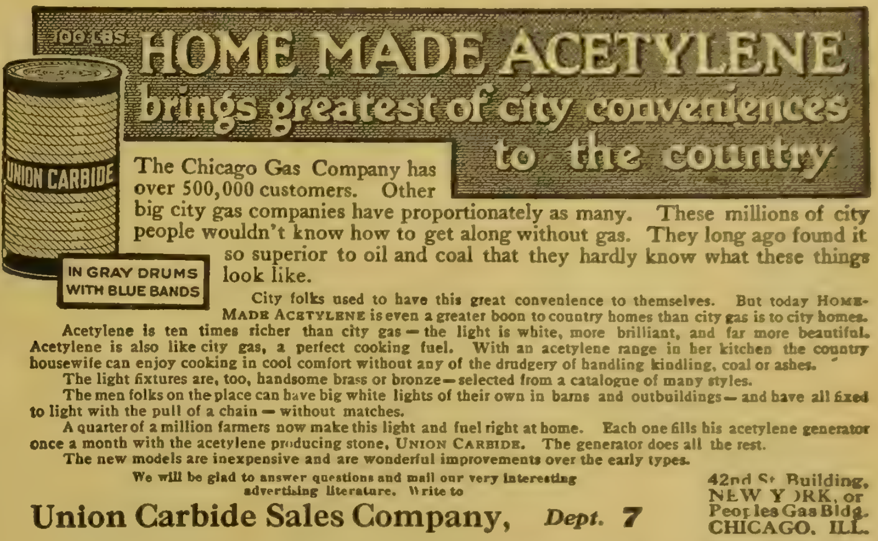
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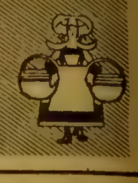
San Francisco-Los Angeles Produce Markets



Los Angeles Market

LOS ANGELES, Oct. 28, 1914.

The prices given below, except where otherwise noted, are those made by wholesale or commission houses to retailers, and are intended to give producers the range of the market rather than an indication of prices which they will secure. Jobbers' quotations to producers are not given.

BUTTER

Extras and firsts have declined one cent since last week, the first change in the butter market for three weeks, owing to slightly heavier receipts.

Prices to trade 4 cents above following quotations:

Creamery Extras	.30
Firsts	.27@28
Country	.24
Ladle	.23

CHEESE

Prices to trade 1 and 2 cents higher:

California Fresh	.16@16½
Domestic Swiss	.21@23
Imported Swiss	.36@38
Eastern Daisy	.17½@18
Longhorn	.18½@19
Oregon Triplets	.17½@18½

EGGS AND POULTRY

Eggs are beginning to come in more freely, but this has not yet affected the high prices prevailing.

Prices to trade 3 cents higher than following quotations:

Fresh ranch, case counts	.42
Candled	.45@46
Northern Case Count	.51
Petaluma-Santa Rosa	.52

Prices to producers:

Hens, lb.	.13@19
Roosters, old	.9
Broilers, lb.	.21
Fryers	.16
Roasters, lb.	.15
Turkeys	.16@22
Ducks	.16
Geese	.14
Squabs, doz.	.2.00

LIVE STOCK

The following quotations are f. o. b. Los Angeles on all stock:

Hogs, 175 to 200 lbs., per cwt.	8.00
Prime Steers	.7¼@7½
Heifers	.6¼@6½
Calves, lb.	.8½@9
Sheep—	
Ewes, head	.4.50
Wethers	.4.50@5.00
Lambs, head	.4.50@4.75

POTATOES

Wholesale selling price:

Idaho	1.30@1.35
Sweets, lug	.50@60
Northern Burbanks, cwt.	1.20@1.30
Salinas	1.80@1.90
Shimas	1.35@1.45
Lompocs	1.80@1.90

ONIONS

Wholesale selling price:

Australian Brown, cwt.	.80@90
Silverskins, cwt.	1.85@2.00
Yellow Danvers	.80@90
Garlic	.13@15

VEGETABLES

Wholesale selling price:

Artichokes, Northern, doz.	.50@90
Beets, doz.	.30@35
Beans, String	.5@6
Lima	.4@5
Cabbage	.60@65
Carrots, doz.	.30@35
Cauliflower, doz.	.40@45
Celery, crate	1.75@2.00
Corn, Sugar, box	.60@65
Cucumbers, lug	.40@50
Pickling, lug	1.20@1.35
Egg Plant	.3½@4
Escarole, doz.	.40
Horseradish, lb.	.13@15
Leeks, doz.	.35@40
Lettuce, crate	.85@1.00
Mint, doz.	.35@40
Okra, lb.	.8@9
Onions, Green, doz. bunches	.15@20
Oyster Plant	.30@35
Parsnips, doz.	.30@35
Peas, lb.	.4@6
Peppers—	
Bell, lb.	.3@4
Chili, lb.	.2@3
Pumpkins, lb.	.1½@2½
Radish, doz.	.20@30
Rhubarb, box	.90@1.30
Spinach, doz.	.20
Squash—	
Summer, lug	.30@35
Crookneck	.30@40
Hubbard, lb.	.1½@2
Turnips	.30@35
Tomatoes, lug	.40@50

FRESH FRUIT

Wholesale selling price:

Apples—	
Banana Apples	1.10@1.25
Bellflowers	.75@1.00
Jonathans	1.25@1.35
Spitzenbergs	1.60@1.75
King Davids	1.25@1.35
Crabapples	1.00@1.10
Bananas	.3½@4
Berries—	
Strawberries, basket	.4@6
Blackberries, basket	.5@6
Cantaloupes—	
Locals, standard	1.25@1.50
Jumbos	2.50@3.00
Casabas, doz.	1.25@1.50
Cranberries, bbl.	7.75@8.25
Figs, box	.90@1.00
Grapes—	
Black Moroccos	1.00@1.10
Cornichon	1.00@1.15
Malagas, crate	1.00@1.20
Muscatels, lug	1.10@1.25
Tokays, lug	1.10@1.25
Guavas, basket	.3@4
Peaches, lug	1.25@1.50
Pears, Bartlett, packed	2.25@2.35
Seckel, lug	1.15@1.30
Persimmons, lb.	.3@7
Pineapples, lb.	.6@6½
Pomegranates, box	.85@1.00
Quinces	.50@65
Roselle, crate	.90@1.00
Watermelons, lb.	.1½@2

CITRUS FRUIT

Wholesale selling price:

Lemons	2.00@3.50
Grapefruit, Seedless	2.25@2.75
Valencias	1.75@2.75
Limes, basket	1.00@1.25

DRIED FRUITS

Wholesale prices to retailers are:

Evaporated Apples, Fancy., lb. boxes	.6½@11
Apricots	.9@11
Nectarines	.12½
Peaches	.6@6¾
Pears	.8@12
Prunes	.5¾@17
Plums	.10

NUTS

Prices named by California Walnut Growers' Association are:

No. 1	.16½
Budded Walnuts	.20
Jumbos	.19
No. 2	.12
Culls	.9

Prices fixed by California Almond Growers' Exchange, f. o. b. California.

Almonds—	
Nonpareil	.21
I X L	.20
N P U	.19
Drake's Thinshell	.15
Pecans	.17
Peanuts—	
California, Raw	.6
Japan	.7½
Eastern	.7½
Rice Corn	5.00@5.25

HONEY

Wholesale selling price:

Comb, Fancy, Water White	.15
White	.13
Light Amber	.12
Extr. Water White	.8
White	.7½
Light Amber	.6½
Beeswax	.32

BEANS

Wholesale selling price:

Producer's price not far from one dollar under these quotations:

Limas	5.85@6.00
Lady Washington	4.50@4.60
Black Eyes	5.50@5.75
Pinks	3.90@4.00
Lentils	8.00@9.00
Navy	5.25@5.35
Small White	5.75@6.25
Garbanzos	7.50

RICE

Wholesale selling price:

California	5.00
Broken	3.50@3.75

HAY

Buying prices f. o. b. cars Los Angeles:

Barley	10.00@11.00
Wheat Hay	10.00@11.00
Tame Oat	11.00@13.00
Alfalfa	9.00@11.00

GRAIN

Wholesale selling prices f. o. b. Los Angeles:

Corn, Yellow	2.20
Corn, White	2.30
Wheat	2.15
Oats, Red	1.85
Oats, White	1.65
Kaffir Corn	1.90
Millet	3.75
Popcorn	4.75@5.00
Egyptian Corn	2.05
Barley Seed	1.45
Milo Maize	2.00
Cal. Seed Oats	2.25
Sunflower Seed	5.25@5.35

FEED STUFF

Wholesale selling prices f. o. b. Los Angeles:

Bran, Heavy	1.55
Alfalfa Meal	1.05
Alfalfa Syrup, per cwt.	1.05
Beef Scraps	3.00@3.10
Beet Pulp	1.25
Cracked Corn, cwt.	2.25
Cracked Wheat, cwt.	2.30
Cotton Seed Meal	1.85
Bloodmeal	3.60@3.70
Bone Meal	2.00
Meat Meal	3.00
Sun Flower Seed	6.00@6.10
Bone Green	1.95@2.05
Charcoal	1.90@2.00
Oil Cake Meal	2.05
Fish Meal	3.15@3.25
Rolled Oats	1.90
Rolled Barley	1.35
Middlings	1.85
Feed Meal	2.30
Oat and Wheat Middlings	1.60

San Francisco Market

SAN FRANCISCO, Oct. 27, 1914.

The prices given below, except where otherwise noted, are those made by wholesale or commission houses to retailers, and are intended to give producers the range of the market rather than an indication of prices which they will secure. Jobbers' quotations to producers are not given.

BUTTER

There has been a decline during the week on creamery extras of a cent and a half. Other grades of butter remain as last week.

Prices to trade 4 cents above following quotations:

Extras	.30½
Prime Firsts	.28½
Firsts	.26
Seconds	.24

CHEESE

Wholesaler to retailer.

Oregon Y. Am.	.12½@16
California Flats	.10@16
Cheddar	.20
Oregon Twins	.14½

EGGS AND POULTRY

Eggs are still going up; 2½ cents was added to extra quotations the end of the past week.

Prices to trade 3 cents higher than following quotations:

Extras	.51½
Select Pullets	.45
Storage Extras	.30

Price to producer:

Hens	.15@19
Fryers	.19@20
Roosters, old	.12
Roosters, young	.17@19
Broilers	.19@21
Belgian Hares, lb.	.9@10
Turkeys	.21@25

LIVE STOCK

San Francisco prices, gross weight:

Steers	.4@7
Cows and Heifers	.3@6¼
Calves, lb., live weight	.6@9½
Hogs	.6½@8
Wethers	.5@5½
Ewes	.4½@5
Milk Lambs	.6½@6¾

POTATOES

Wholesale selling price:

Delta, Burbanks	.60@80
Salinas Burbanks	1.40@1.60
Sweets, cwt.	1.40@1.50

ONIONS

Wholesale selling price:

Yellow, sack	.40@50
Garlic, new	.10@12½

VEGETABLES

Wholesale selling price:

Beans—	
Wax	.1½@3
Strings	.1½@3
Limas, lb.	.2@3
Brussels Sprouts, lb.	.2@3
Cabbage, cwt.	1.00@1.25
Carrots, sack	.35@50
Celery, doz.	.15@25
Corn, Green, sack	1.00@1.75
Cucumbers, lug	.30@60
Egg Plant, lug	.25@50
Peppers—	
Bell, lug	.30@40
Chili, lug	.40@50
Rhubarb, box	[illegible]
Tomatoes, lug	.20@40

FRESH FRUIT

Wholesale selling price:

Apples—	
Bellflowers	.40@65
Spitzenbergs	.50@90
Jonathan	.40@75
White Winter Permains	.50@65
Crabapples	.25@50
Newtown Pippins	.50@90
Bananas, Hawaiian, bunch	1.25@1.75
Cantaloupes, crate	1.00@1.25
Nutmegs, lug	.20@50
Cranberries, bbl.	7.00@7.50
Figs—	
Black, double layer	1.00@1.25
White, box, double layer	.40@50
Grapes—Crates	
Black	.40@65
Cornichon	.50@60
Tokay	.45@50
Seedless	.75@1.00
Malagas	.65@75
Muscats, lug	.75@85
Huckleberries	.7@9
Nectarines, crate	.75@1.00
Peaches, box	.30@50
Pears—	
Bartletts, wrapped	1.25@2.00
Bartletts, lugs	.50@75
Winter Nelis, wrapped, box	.75@1.00
Other varieties	.35@75
Pomegranates, box	.50@1.00
Pineapples	1.50@2.00
Persimmons	.75@1.25
Prunes, crate	.60@1.00
Quinces, box	.75@1.00
Raspberries, chest	5.00@7.50
Strawberries, chest	3.00@4.00
Watermelons, doz.	.75@1.50

CITRUS FRUIT

Wholesale selling price:

Grapefruit, Seedless	1.75@3.00
Lemons	2.00@4.50
Lemonettes	1.00@2.00
Limes, case	3.00@5.00
Valencias	2.00@3.00

DRIED FRUITS

Wholesale prices are:

Prunes—1914 crop, bulk basis, 30-40s, 6½c@6¾c; 40-50s, 6@6¼c; 50-60s, 5½@5¾c; 60-70s, 5½@5¾c; 70-80s, 5¼@5½c; 80-90s, 5¼@5½c; 90-100s, 5¼@5½c. 1913 crop worth practically same prices. The above are for Santa Clara Prunes, outside sections about ¼c.

Other Fruits 50-lb. boxes—	Standard.	Ch.	Extra Ch.	Fcy.
Evaporated Apples	5¾c	6 c	7	
Apricots	6½c	7½c	8 c	8¾c
Peaches	3½c	4 c	4¼c	5
Pears	7 c	8 c	9 c	10

RAISINS

RAISINS—The following prices are f. o. b. Fresno, as given out by the Associated Raisin Company for October shipment, and with the exception of bulk seeded and ungraded Muscatels are guaranteed against a decline to December 31st: Fancy seeded, 16-oz., 6½c; 12-oz., 5½c; bulk, 6c; choice seeded, 16-oz., 6⅛c; 12-oz., 5c; bulk, 5½c; loose Muscatels, 2-crown, 5c; 3-crown, 5¼c; 4-crown, 5¼c; ungraded, 5c; 1914 crop—Thompson Seedless, No. 1, pkgs, 7⅜c; 12-oz., 6c; 50-lb. cs., 6¼c; Sultanas, 50-lb. cs., 5½c; bulk, layers, 50-lb. bxs., $2.75; in 20-lb. bxs. 6-crown, $2.75; 5-crown, $2.25; 4-crown, $1.60; 3-crown, $1.30; 5-lb. bxs. on all bulk stock, 50c additional; 10-lb. bxs., 25c additional. Car tons—Clusters, 20 to a case, No. 1, $1.70; No. 2, $2.10; No. 5, 4 to a case, $2.25. Local representatives of the association are asking about ¼c higher, while several of the larger packers are quoting ½c under these figures.

NUTS

ALMONDS—Prices fixed by Almond Growers' Exchange to the trade, f. o. b. California:

Nonpareil	.21
I X L	.20
Ne Plus Ultra	.19
Drakes	.16

Wholesale selling price:

Peanuts—	
Unpolished	.5@8
Polished	.6@6½
Japanese, Shelled	.6¼@6¾
Italian Chestnuts	.6½@7

BEANS

Wholesale selling price:

Limas	5.15@5.25
Lady Washington	3.60@3.75
Pink	3.25@3.50
Black Eyes	3.75@4.00
Cranberry	3.80@4.00
Small White	4.30@4.50
Garbanzos	5.50@6.00
Large White	3.60@3.85
Bayou	4.00@4.25
Manchurian Speckled Bayous	3.50@3.75
Manchurian Butters	4.25@4.50
Manchurian Cranberry	4.00@4.25
Red Mexican	4.00@4.25
Red Kidney	4.25@4.50
Horse Beans	3.00@4.00
Bayou, Mexican	4.00@4.25

HONEY

Comb, Water White	.14@1
Amber	.10@1
Dark	.7@1
Extracted White	.7@9

WEATHER CONDITIONS

For Week ending Oct. 24, 1914.

Report from the various stations of the U. S. Weather Bureau, by Geo. H. Wilson, director, San Francisco:

	Rainfall Data			Temperature Data	
	Past Week.	Seasonal to Date.	Normal to Date.	Maximum.	Minimum.
Eureka	1.41	5.17	3.32	64	42
Red Bluff	.34	1.46	2.02	82	44
Sacramento	.00	.50	1.18	78	44
San Francisco	.03	.31	1.24	76	50
San Jose	.04	.40	1.05	80	38
Fresno	.10	.32	.82	80	44
Independence	.00	.37	.72	74	40
San Luis Obispo	.00	.02	1.45	92	46
Los Angeles	.00	.19	.63	88	54
San Diego	.04	.72	.43	84	54

T means trace.

Light Amber	6½
Dark	4@5½
Beeswax	27@32

HOPS

1914

Sacramento Valley	11@11½
Sonoma-Mendocino	11½@12½
Oregon Clusters	11½@12½

HAY

We quote the average wholesale prices on carload lots on today's market as follows:

Fancy Wheat Hay, lt. bales	12.00@13.00
No. 1 Wheat or Wheat and Oat	8.00@10.00
No. 2 Wheat or Wheat and Oat	6.00@7.50
Choice Tame Oat	10.00@11.00
Other Tame Oat	6.00@9.00
Barley	5.00@7.50
Wild Oat	5.00@7.00
Alfalfa	6.00@9.00
Stock Hay	4.50@5.00
Straw	30@45

GRAIN

Wheat, Cal. Club	1.85@1.87½
Corn, Eastern Yellow, blk.	1.75@1.76¼
Corn, Egyptian White	1.42½@1.45
Barley, Feed	1.10@1.12½
Oats, White	1.47½@1.50
Oats, Red, Feed	1.35@1.50
Millet	[illegible]
Flax	5@5¼
Rye	1.60@1.60
Sunflower	5@5½

FEED STUFF

Alfalfa Meal, car lots	12.50@13.50
Bran, ton	27.00@28.00
Feed Cornmeal, ton	40.00@41.00
Cracked Corn	40.00@41.00
Rolled Barley, ton	24.00@25.00
Rolled Oats, ton	[illegible]
Middlings	31.00@32.00
Shorts	28.00@29.00
Oilcake Meal	32.00@33.50
Cocoanut Oilcake Meal	23.00@24.00

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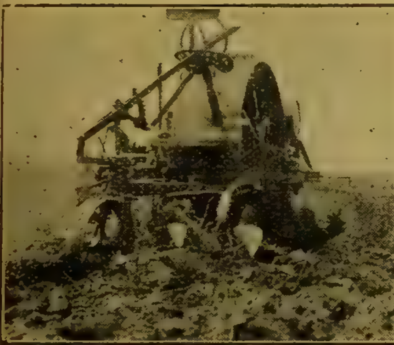

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use a gang of four 10-inch moldboards for grain crops. If you like discs, use a gang of three 26-inch discs. You will do better work with the discs under ordinary conditions.
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use a 6-foot or 8-foot tool and travel at high speed.
In Your
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we will show you how to make a hitch of three mowers, cutting at high speed, at a cost of 10 cents per ton.
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it sometimes is better to use a special 16-inch moldboard instead of the regular sub-soilers.
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the STEEL KING will surprise you. It sticks like a goat.
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8 HORSES
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NOW IS THE TIME TO SOW
Payne's Royal Exhibition Pansy Seed, the best strain on the Pacific Coast, Giant Perfection Stocks and Payne's Christmas Flowering Sweet Peas, all described in the above mentioned Catalogue.
THEODORE PAYNE
245 S. Main St. Los Angeles, Cal.

Citrus Fruit Market

LOS ANGELES, Oct. 28, 1914.

Everything is lovely on the orange market. Last week has seen on the whole the highest prices of the year. Valencias are being cleaned up very fast. Five hundred cars were sold the beginning of this week and only about 200 remain to be sold. The first Floridas sold on the market last week at $1.80, in comparison with $3.25 for Valencias. This is a pretty good indication that the market is not in need of green oranges. Tulare County shippers advise that they are finding fruit in the earlier orchards that will meet the test and shipments will begin about the 10th of November on Navels. This will be too late for the Thanksgiving market in the far eastern sections, but will catch the Thanksgiving trade in the middle west.

The lemon market is about the same, 300's are finding good sale, but 360's and second grades are slow.

Shipments

Shipments of oranges from Southern California to date since November 1, 1914, 38,797; lemons, 2900, total, 41,697. To same date, last season 13,562, lemons 2183, total 15,745. To same date, two years ago, oranges 30,224, lemons 5938, total, 36,162. Shipments of oranges from Tulare County to date, 5876 cars; from Butte County, 404 cars.

Answers in this column by Dr. Wm Petrie, 2714 South Harvard Blvd., Los Angeles, are without charge. For immediate mail answer remit $1.00. In writing questions give full symptoms or particulars of injury of animal.

Screw Worms

I would like to know what kind of a fly is responsible for the screw worm. Please describe it as fully as possible. The worm seems to get into nearly all fresh wounds on the farm stock and sometimes in the old wounds. No one in the neighborhood seems to know what the fly is like.—Subscriber, Exeter.

To get rid of the screw worms apply iodoform to the wound and cover it with collodion. This may have to be repeated several times. Then dust the parts with air slaked lime to heal them.

(The screwworm fly, chrysomyia macellaria Fab,. is a bright metallic green with three or four black stripes on the upper part of the thorax, and about one-third of an inch long. It deposits its eggs in sores and wounds and in nostrils and ears of cattle. It lays 300 or 400 eggs in a few moments. In a few hours the larvae develop. The larvae are white maggots without legs.—Editor.)

Bleeding Warts

I have a young mare troubled with warts. The raw, tumorous kind which scab over, then break and bleed. The largest is about three inches long and two inches in diameter and surrounded by many small ones. Would a string tied tightly around the larger ones cause them to drop off, or would a caustic take them off?—Subscriber, Ethanac.

Various treatments are followed in dealing with such abnormal growths; each with greater or less success, according to the thoroughness with which they are applied. Strangulating them with a cord as you suggest is all right if the cord is placed at the very base of the wart and made tighter from time to time until the wart drops off. Then the sore may be treated like any ordinary wound. For the small ones apply nitric acid. That will kill the wart and it will drop off in a day or two. Be careful in using the acid and do not allow it to touch your hands or clothing, as it is a very strong caustic.

Thrush

My horse has lost the frogs in her front feet and the new frogs continue to slough off. They have a very offensive odor and are very soft. What is the best remedy?—Subscriber, Sanger.

Probably it is thrush. Remove the shoes and pare the loose parts away. Then soak well with turpentine, being sure to get the turpentine well down into the cracks. A few applications will stop the trouble, and then in time a healthy frog will grow again.

Snag

On bringing colt in from pasture after being in the hills for eight months, I find he has running sore on inside of right hock joint, just below the hard substance that grows inside all horse's legs. The opening is about the size of a small pea and the discharge is very light and of a bloody nature. The joint is not much swollen and seems to give no pain, as the colt does not mind having it handled and is not at all lame. Please advise treatment—Subscriber, Ontario.

Probably a small snag or thorn has been forced through the skin, and broken off, leaving a portion inside. You will have to explore the wound to the bottom with a probe and remove any foreign substance that may be found. After that it will only be necessary to keep it clean.

Conjunctivitis

Some of my cow's eyes run water and the eye turns white. The parts around the eye get pink. It does not affect their appetite. Is it pink-eye? If so what can I do for it?—Subscriber, Kerman.

The front of the eye is covered with a skin or membrane that is called the conjunctiva. It is very thin and perfectly transparent. Inflammation of this membrane causes it to become thickened and turn white. The disease is called conjunctivitis. It may be caused by a blow from a whip lash, from dust or from the small burrs that surround some seeds. There is a form of conjunctivitis that is caused by a microbe and is contagious. In either case the following treatment should bring good results: Sponge the eye well with warm water and then dry it by pressing a clean towel against it. This can all be done with the eye closed. Then press the lids back with the fingers and apply with a camel's hair brush to the membrane a solution made of ten grains of nitrate of silver to the ounce of water. Repeat this once a day until the eye is partly cleared. The animal should be kept in the dark, as the light causes pain and retards recovery. Or if it is necessary to turn out for feed then tie a thick cloth to the horns or the halter, so it will cover the affected eye and keep the light out of it.

Summer Sore

I have a valuable horse that has a growth on the ankle. When it first came it looked like a small wart. Now it is as large as a hen's egg. It looks like a chunk of raw meat and bleeds very easily. I have tried a number of treatments, among them was burnt alum, and nothing seems to affect it. Can you tell me what to use to remove it?—Subscriber, Gridley.

It is probably what is commonly called a summer sore, caused by a very small parasite getting ino the tissue of the skin and causing so much irritation that the horse will gnaw and rub it and cause it to bleed. It is difficult to heal. Such sores usually get well without treatment when winter comes, but often return the next summer. Clip the hair very close all around the sore and apply vaseline to the skin. Then soak a pledget of cotton, the size of the sore, with formaldehyde (full strength) and bind it loosely on the sore. Keep it on for half an hour, if you can, and then cover the parts with collodion. When the scab comes off dust the parts with air-slacked lime. If the parasites are all killed the sore will heal quickly; if not repeat the treatment.

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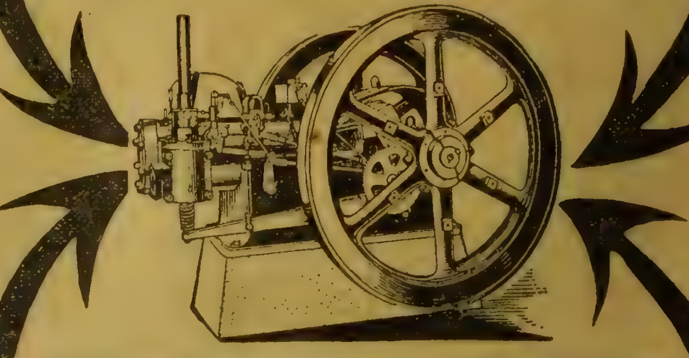

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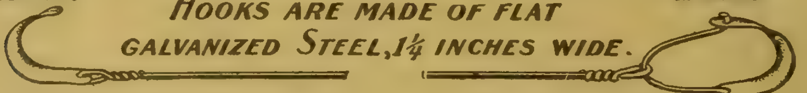

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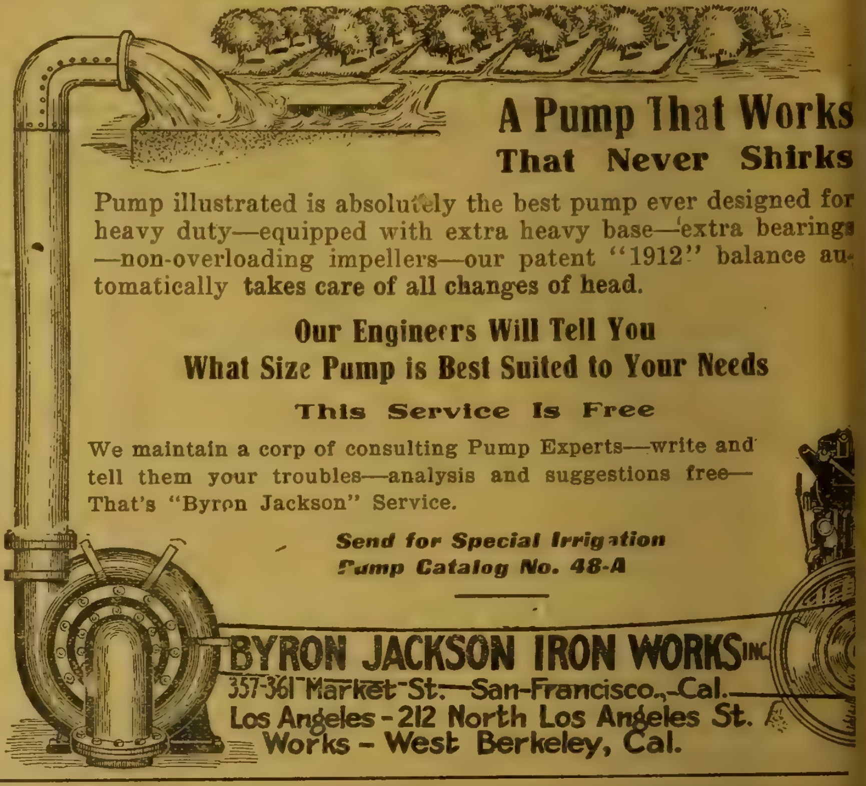

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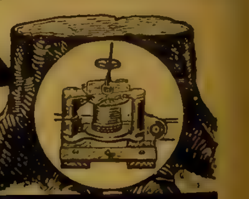

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An Illustrated Weekly Magazine, Devoted to the Rural Home and Ranch

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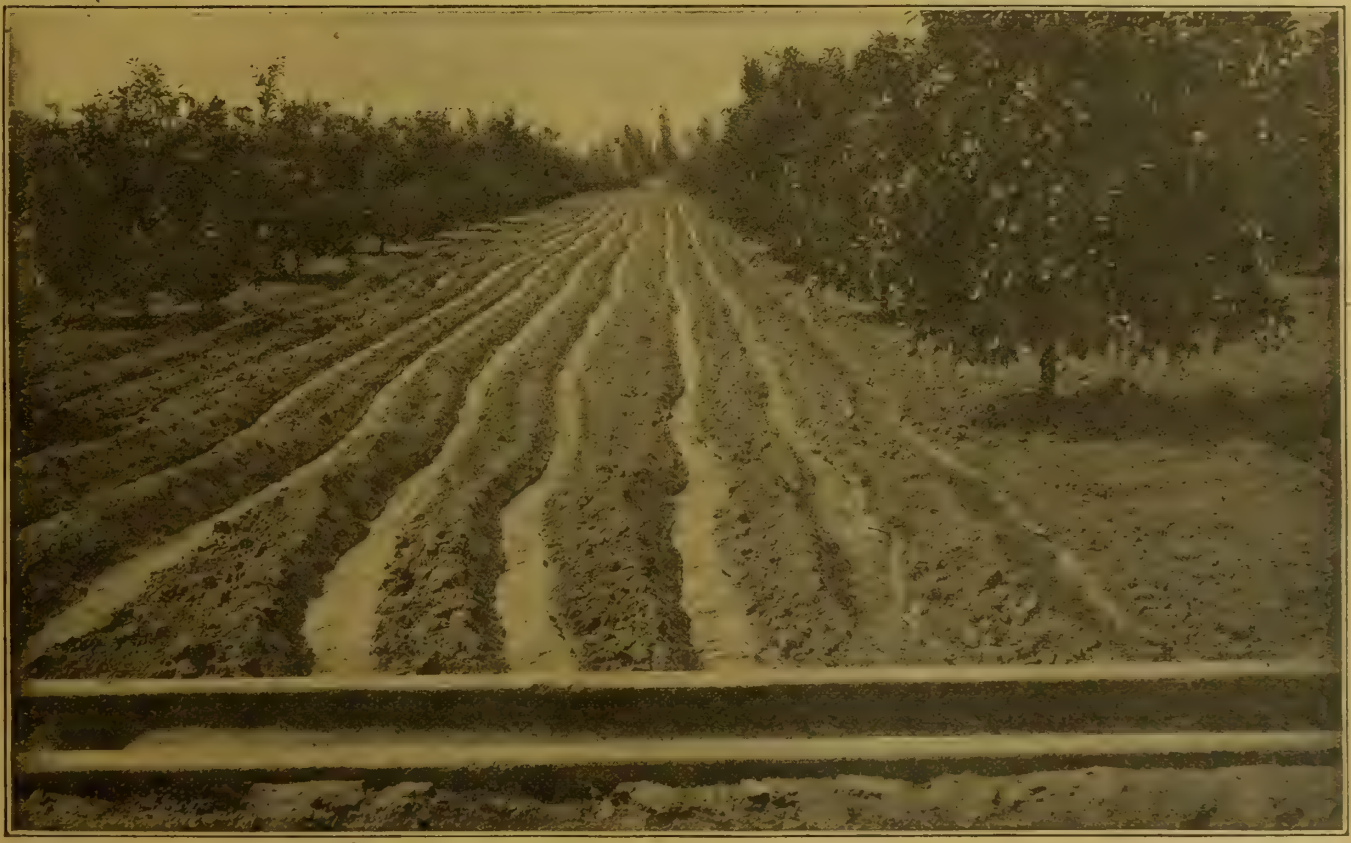
Irrigation in Los Angeles County Citrus Orchard



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FARM IMPLEMENTS—A plow, a harrow and a cultivator.

This equipment is the best obtainable, produced by well known manufacturers. The trees and seed will be furnished by the most reliable firms on the Pacific Coast.

Watch for Their Names
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Send this paper to any friend whom you think may be interested in such an opportunity. We will send a three months' subscription to The California Cultivator, without charge, to any one in the East who is interested in owning a California farm.

Write for further particulars of this inviting opportunity to establish yourself on a profitable and fully equipped farm.

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California Cultivator

Rural Californian combined with California Cultivator

Vol. XLIII No. 19 LOS ANGELES: THURSDAY, NOVEMBER 5, 1914 One Dollar Yearly

Nurserymen's Convention at San Diego

Some Serious Business, More of Good Times, and a General Get-Together Which Will Prove Advantageous to the Nursery Industry

SAN DIEGO is in California, consequently within the boundaries of the U. S. But it has many quaint nooks all the way from Point Loma or even La Jolla around to Tia Juana, and in addition has such a foreign way of working the tourist that one may readily imagine himself in a foreign land.

Speaking of Point Loma, its wonderful view of sea and mountain ranges, and its peculiar religious institutions which help in giving a foreign impression, make it a spot long to be remembered.

But one spot on "the point" which is the shrine of nature lovers is the home of Alfred D. Robinson, editor of the California Garden.

Mr. Robinson not only edits California Garden but he makes one, and it's worth a pilgrimage to view it.

He grows many things, but dahlias he grows to perfection. Not content with growing from the tubers produced by others he has hybridized and has grown seedlings which I have not sufficient adjectives to describe.

One in particular, "Star of the East," is a magnificent large white. That one flower is worthy a life's effort. In addition to his other duties Mr. Robinson is president of the floral association, which is a factor in the beautifying of home grounds and even highways and byways of San Diego.

The San Diego Floral Association did itself proud in the matter of entertaining the California Association of Nurserymen. In the first place the hall was magnificently decorated, combining excellent taste with a showing of plants and flowers which was educational in itself. Not content with one banquet they gave two. One was called a luncheon and was served in one of San Diego's most beautiful parks. The more formal banquet was given on the last evening of the convention at Hotel Grant and, as usual, the principal feature was a number of short addresses made by various members of the association. John Morley, park superintendent of San Diego, presided and retiring President Coolidge and incoming President Howard both made witty speeches.

A pleasing event on the last day of the convention was a visit to the grounds of the Panama-California Exposition, and this was a surprise, even for those who have visited it within the last few months. San Diego will certainly put up a great exposition. Its grounds traversed by ravines and hillsides have afforded opportunity for wonderful landscaping, and no exposition was ever given which afforded a more beautiful site than does the Panama-California at San Diego. Nearly all of the buildings are completed and doors are barred except in some cases where exhibits are being installed. The horticultural building is especially beautiful, with a wonderful showing of rare plants.

The names of the new officers of the association were given on editorial page of the Cultivator of October 22.

The committee on resolutions returned the usual expression of heartiest thanks to the people of San Diego for their reception, also commending the administration of the state commissioner of horticulture and urging more uniform horticultural laws. The United States department of agriculture was commended for its magnificent work in the matter of plant quarantine. A resolution was passed sustaining the state viticultural board for its attitude in protecting the vineyard interests of the state.

For the greater part of the story of the convention we refer our readers to the little photographs appearing in this issue. They tell the story better than it can be told in any other way.

W. B. Ames, San Dimas; E. Bernard, San Diego; T. D. Robertson, Fullerton; John Vallance and John Morley, Judging Committee on Exhibits in hall.

Wilson Popenoe of the U. S. Department of Agriculture, E. D. Sturtevant, water lily grower, Hollywood; Mr. Thiene, Peter Bisset, U. S. D. A., and T. U. Barber of West India Plant Introduction Gardens.

John S. Armstrong, H. W. Kruckeberg, being photographed after dark.

Frank T. Swett of Martinez, and Mr. Briggs, of the Sacramento Bee.

R. M. Teague at left, Frank Wilson of Fresno, center, and John Vallance of the C. C. Morse Seed Company.

Ernest Braunton, Theodore Payne and former President D. W. Coolige.

Gill and Pettingell. At the reader's left, J. W. Pettingell of Santa Barbara and E. Gill of Berkeley.

George C. Roeding talking to the new president, Fred Howard, regarding next year's campaign.

Miss Kate O. Sessions gathering a fund of information from Mr. Peter Bissett of the U. S. D. A.

John Morley at the reader's left, Superintendent of Parks, San Diego, and R. M. Roberts, Agriculturist for the Santa Fe.

At the reader's left and somewhat in the background, Mr. J. F. W. de Jong. Center and nearest the foreground, W. V. Eberle of California Nursery Company; at his left, R. M. Teague of San Dimas Nurseries.

Fred Rafferty, Jacob Dieterich and Edwin Lonsdale, Manager Floradale Seed Farms, Santa Barbara.

J. H. Smith and Paul G. Thiene, Superintendent Department of Horticulture, Panama-California Exposition.

Organize State Association

California's Greatest Industry Has No Regular Organization Looking After Its Larger Interests. The Matter Will Be Discussed at the State Convention Thursday Afternoon

IN nearly all states where fruit growing forms one of the principal industries, there are regularly organized associations with a permanent membership, and the duties of these associations, or of their directors, is to watch over the larger interests of the industry. It may be these interests have to do with legislative matters, nomenclature of fruits, more successful methods of work, or, in some instances, with the merchandising side. Usually, however marketing and allied questions are

(Continued on Page 438)

COVER CROPS

Fenugreek
Melilotus
Burr
Clover
Vetches

produce humus and nitrog en in the soil — the two big essentials in groves and orchards. From our studies of the needs of the citrus belt this year, we are strongly recommending the following:
FENUGREEK: is a rank and rapid grower, producing successfully on poor soils.
MELILOTUS INDICA and **BURR CLOVER** are also adapted to heavy and poor soils as they produce a deep and heavy root system resulting in the breaking up and in the porosity of the soil.
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We cannot too strongly advocate the inoculation of seed for best results. Hundreds of our patrons testify that the use of

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Trees that grow and bear true to name. Now booking orders for next season. Write us now about what you will want.

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Important Notice *to those attending* ***THE FRUIT GROWERS CONVENTION***

The attention of the delegates and members who will attend the State Fruit Growers' Convention to be held in Los Angeles on November 9th to 14th, is called to the fact that the Hotel Northern has been selected as one of the headquarters, and in consideration of this the Management has made a very special rate for all delegates and their friends attending the Convention, which gives them the opportunity of obtaining a first-class room without attached bath for $1.00 per day, or a room with connecting bath for $1.50 per day; no extra charge, at either rate, for two persons occupying same room. These prices cover all rooms in the hotel, some usually renting as high as $5.00 per day.

The above special rates are made by the Management of the Hotel Northern to the members of the State Fruit Growers' Association and their friends in order to get this new, modern, fireproof hotel known to the fruit growers of the state. Send them a postal card and room will be reserved for you.

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Special Rates for Convention

1 or 2 persons without bath $1.00 Day
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When writing advertisers, mention The Cultivator.

Citrus and Tropical Fruits

WHY NOT EDUCATE THE RETAILER OF CITRUS FRUITS?

Written for California Cultivator
By J Eliot Coit

A few mornings ago while walking along a business street in Berkeley I paused before a fruit display in the front of a grocery store. A boy was engaged in taking lemons from the box, unwrapping them, and arranging them in a large pyramid-shaped pile. Just as he was placing the last lemon on top the footing course gave way and the pile slid down, a few dozen rolling around on the freshly sanded floor. I did not remain to listen to his remarks but as I walked away the incident set me to thinking.

In the first place, I knew that probably 90 per cent of those lemons were now infected with blue mold and would show decay in three or four days. I also realized that the lemons would likely be sold before the decay became apparent. The woman who buys a dozen lemons from that pile will doubtless expect them to last her a week. She will be disappointed and disgusted.

A few weeks ago a peddler called at my door with a load of oranges. The fruit was piled up in the bed of the cart. As the fruit was apparently sound and the price low I purchased four dozen. At the end of three days all the remaining oranges with the exception of three were decayed with blue mond.

The average housekeeper does not understand the relation between careless handling and decay, and after a few such experiences concludes that citrus fruits will not keep and limits her purchases accordingly. The average grocer also is apt to take too high a percentage of decay for granted and fix his prices high enough to cover much unnecessary loss. All this causes a certain amount of dissatisfaction with citrus fruits, and when the instances above mentioned are multiplied by thousands in order to include the groceries and peddlers' carts all over the country it becomes evident that the result can be none other than a restriction of consumption.

But this is not the time for citrus growers to acquiesce in any restriction of consumption. With production increasing at a rapid rate no economical means of increasing consumption should be neglected. The interest of the fruit grower does not cease with the acceptance of his fruit by the trade. His prosperity depends to a large extent upon the satisfaction, enjoyment, and enthusiasm with which the ultimate consumer uses his fruit.

Much is being done by advertising to educate the consumer in regard to the dietetic value and eupeptic qualities of citrus fruits. Such advertisements might be allowed to include the suggestion that it is more economical to select fruit from the original package than from the display window.

Some years ago Mr. G. Harold Powell carried on a campaign of education among the growers and packers in regard to the value of careful handling. So much good was accomplished that all became interested, and at present careful handling is appreciated and practiced by the average grower. Is it not worth while to preach this same doctrine to the retailer?

Perhaps it would be practicable to place in each packed box a neatly printed card calling attention to the necessity of handling the fruit carefully. Two pictures at the top might serve to catch the eye and be made to represent sound oranges carefully handled and mouldy oranges resulting from dropping the fruit on the floor. Several well planned paragraphs below the pictures would give facts and figures to clinch the idea in the minds of those sufficiently interested to read.

However, it is not my intention to say by what means the retailer is to be educated, but to point out the facts that the ignorance of the retailer is now resulting in much rotten fruit which causes him to increase his margin. Poor keeping fruit and high prices dampen the ardor of the consumer, whereas it will require enthusiastic consumers to take 50,000 cars of fruit a year at satisfactory prices.

MARKETING ORANGES

Written for California Cultivator
By H. E. Collins

The general business depression extending all over the United States and Canada has had its bad influence on the wholesale orange market as well as on other lines, but has the orange merchant, the retailer, made provisions to meet changed conditions? In a general way, no. It is true he buys his goods cheaper this year from the producer than before, but does he sell proportionately cheaper? In most cases, No. A short time ago Valencias were selling in San Francisco at 50 cents per dozen. This means on a box of 150 size (12½ dozen) $6.25 per box. These goods had cost $1.65 f. o. b. or $2.00 delivered per box, or not quite 16 cents per dozen. 300 per cent divided between the jobber and the retailer.

In Chicago, Montreal and Detroit, Valencias were selling for 75 cents and 60 cents per dozen on August 8, last. These goods had cost delivered about $2.75 per box of 12½-15 dozen. Allow they were all 150 size, 12½ dozen per box (the average dozen in a box is nearer 15 than 12½) this means a box that cost $2.75 was sold for $9.37½, the difference divided between jobber and retailer; and my observation led me to believe that in most cases the jobber being the better business man was working on a fair margin and that the retailer was actually limiting consumption by asking prices that put the fruit out of the reach of the many.

The higher the price to the consumer, the slower the sales. Cheaper the retailer buys, does less business and still makes money. But how about the

CITRUS TREES

Buy from the largest Citrus Nurseries in the World

—and know what you are planting. Teague trees are better than others because scientifically grown. They are started right, grown right and shipped right. Ask for quotations.

We can supply all the STANDARD SORTS in almost any quantity—

ORANGES :: LEMONS
POMELOS

Teague trees are well rooted, strong and thrifty, free from scale, guaranteed true to name.

OUR BOOK "CITRUS FRUITS" — handsomely illustrated; a wealthy fund of accurate data —sent for 25c in stamps.

San Dimas Citrus Nurseries INC
ESTABLISHED 1890 BY R.M. TEAGUE
San Dimas, Cal. U.S.A.

grower, suppose he could get five cents more per dozen or about 60 cents per box more on a normal crop of say 15,000,000 boxes—$9,000,000 velvet for California. Is this not worth looking into, and everyone using all his brains and energy to bring about a different condition?

When we find a way to give persons of moderate means oranges (and they want them) at popular prices, 100,000 carloads will be needed in the United States and Canadian markets.

The retailer is entitled to a profit; the jobber is entitled to a profit; but the growers or manufacturers of the goods should have something to say if the present methods pursued by the distributing trade are unsatisfactory and profitless. Let any one reading this article write to friends in the East and get the price of oranges by the dozen, then figuring the average dozen per box at 15, look at his returns per box at that date, and I guarantee he will do some thinking right away and will do something else later. Put yourself in the other fellow's place. How many oranges would you buy at 60 cents per dozen or $9.00 per box for a family, say, of four?

In order to increase consumption you must reach the majority of the people. The minority have the most money individually, the majority the least individually, but most collectively. Therefore in order to get volume cater to the majority. The fruit can be sold at such a lower price per dozen that the majority can buy and show a good profit to all.

How many $4000 automobiles do you see compared with $1000 machines or less? Read the hand-writing on the wall, think and act.

The solution of this condition may not be worked out at the first effort, and many will say it cannot be done. But it can be done. It has been done in other lines, and very successfully too. Furthermore there is money in it for all concerned because the mass of the people want our goods at a price they can afford to pay, and that price would show a good profit to all concerned. But the retail price must be governed by the wholesale cost. Under present conditions practically it is not.

I saw oranges in Los Angeles stores at 40 cents per dozen or $5 to $6 per box last week. This fruit could be purchased for $1.90 per box or 12⅔ cents per dozen, delivered in Los Angeles wholesale. Now the difference between cost and selling is too great, that is, to freely move the fruit and put it in the hands of the multitude. I saw 150 boxes of grape fruit (pick boxes) sold in Redlands in one day by one store two weeks ago at 50 cents per box. Now, mind you, this was in Redlands, where many people can get grape fruit from their friends for the asking. But until this live merchant sold it by the box for 50 cents it had been mostly wilting in the stores at 40 cents to 50 cents per dozen or rotting on the ground three blocks from the main street. It is only an example of what can be done with popular-priced fruit by a merchant who figures on the volume of sales.

Under our modern methods in California oranges can be grown and sold to the consuming public at a price whereby they are no longer a luxury for the extremely rich and very well to do, but can be used freely by people of moderate means, the great consuming class who now by the short-sighted policy of the present distributors are prohibited from a healthful and pleasant fruit to the detriment of the California growers.

CITRUS FRUIT ESTIMATES

The estimates for Florida run from 8,500,000 to 9,000,000 boxes of fruit; not much increase in oranges, but about a 50 per cent increase in grapefruit over last year.

California is looking for a somewhat lighter crop than a year ago, about 40,000 cars, which, roughly figured, would mean about 16,000,000 boxes of oranges and lemons, grapefruit cutting no figure in the California shipments. Of this amount there will probably be something like 8,000 cars of lemons.

Other citrus sections of this country cut very little figure. Oranges are raised in Texas, Louisiana, Mississippi and Alabama. The Louisiana crop will run close to 300,000 boxes, but the output from other states is hardly worth considering at this time.

The crop on the Isle of Pines, almost wholly grapefruit, has been increasing rapidly, and must be considered as a factor even now, though in years to come it will be such as to make the growers there serious competitors of Florida pomelo men. This year they expect to ship 150,000 boxes; this fruit going by steamer direct to New York and being sold wholly in that city.

Porto Rico shipped to New York last season 229,000 boxes of oranges and 167,000 boxes of grapefruit. The growers are claiming that they will have a 50 per cent crop increase this season.
—Florida Grower.

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and other
SCALE
by
spraying
with
ZENO

The Most Efficient and
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ZENO *is more efficient than fumigation* because it controls ALL the insects controlled by fumigation at one-third the cost and is effective against four times as many citrus pests, such as Scale, Red Spider, Silver Mites, Black Fungus or Smut, Lichens and other fungus on the bark. It leaves the tree in a thoroughly renovated, clean, healthy condition.

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One gallon size 20c
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FROST DAMAGE
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ESTABLISHED REX 1896
For Citrus Spraying
REX LIME and SULPHUR SOLUTION
Minimizes Scale Troubles, Controls Red Spider, Destroys Fungous Growth, Tones and Vitalizes the Trees.
For Deciduous Spraying
REX LIME and SULPHUR SOLUTION
Kills the Insects, Destroys the Eggs, Deadens the Fungus Spores, Is a Tonic, Fertilizer and Vitalizer for the Trees. Is the best general clean-up Spray there is. Most efficient and used in larger volume for peach Blight year after year.
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REX LIME and SULPHUR SOLUTION
Sprayed on vineyards during dormant season, destroys the fungus spores and equals any spray in controlling mildew.
The Rex Companies Specialize Spray Materials and our chemists devote their entire time to this work. Eighteen years of continuous Spray business means that Rex Sprays have the virtue. They are the standard.
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Write for "Rock Bottom" Prices on your needs.
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are inconsistent terms. You should give your pocketbook as well as your soil a square deal. Proper soil care is the safest investment you can make.
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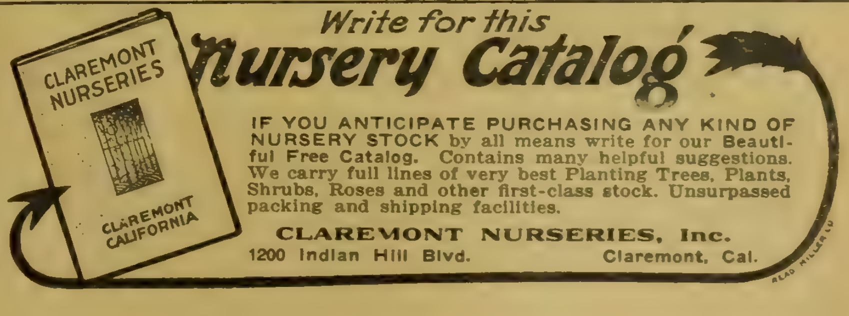

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The strong simple construction of this plow embodies many attractive features which add to ease of operation.

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You will never know the full meaning of the above words until you buy and plant Roeding's True Trees. It is better to be safe than sorry—better to exercise a little caution in your first purchase than to have your trees turn out to be something you don't want.

WE grow everything that grows—fruit and ornamental stock of every kind and description, guaranteed true to name and carefully packed to reach you in first-class condition.

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Tell us your plans. We are always glad to advise with prospective customers as to what is most desirable and profitable for them to plant. This service costs you nothing — being offered absolutely free. We are in constant touch with markets and growers everywhere and can advise you intelligently. WRITE US TODAY.

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Box 12 Fresno, Cal.

ORGANIZE STATE ASSOCIATION

(Continued from Page 435)

left to special organizations. California has had no such organization looking after the more general interests of fruit growing or agriculture. Fruit growers have met in annual or semiannual sessions and committees have been appointed which have had annual existence, one in particular—that of transportation—having lived for years and accomplished much good. But at the same time the looseness of this "organization" has been such that it has been somewhat embarassing. A "delegate" was any attendant, no matter what his calling, and we recall a few years ago one of the largest conventions ever held in the state, at which fruit growers were in minority. It was at a time when Russ Stevens, as chairman of the committee on transportation, did not receive the support which his committee is receiving today, and his report was absolutely turned down. Possibly it was wise, but in any case it was proof that the interests of the fruit growers were not uppermost in the minds of the loudest voters in the convention.

In view of the greatness of the fruit growing interests of this state is it not wise that at the fruit growers' convention, which will convene in Los Angeles next week, a part of one afternoon should be given over to discussing these matters and getting the organization on a firm basis?

In the past the state horticultural commission has been able to give full reports of the proceedings of conventions in book form but at the last three sessions this has not been possible because of use of moneys at the command of the commission for policing and quarantining the state. The proceedings of the Los Angeles meeting will probably appear in book form through the good will of firms who have articles to sell to fruit growers. Reports received from nearly a dozen associations in other states show that not a single one of them was compelled to resort to advertising in order to issue a state report. Should the greatest fruit state in the Union make such a showing?

Although no regular place on the program has been set aside for discussion of the organization of an association, it appears that on Thursday afternoon there will be an opportunity for a short discussion.

In order to get an expression from some of the fruit growers of the state the Cultivator has asked a number as to the wisdom of such action. From replies received we quote:

State Commissioner A. J. Cook

While Dr. Cook has not written anything directly for publication, the matter of the formation of such an organization was talked over in committee meeting, at which Dr. Cook was present. It appealed to him, as to all others, that there was opportunity for great good to be accomplished in the formation of such an association. It is anticipated that the organization will affiliate with the state horticultural commission, the force of the experiment station and agricultural college and, in fact, use every force which will advance fruit interests.

W. A. Johnstone.

The idea of forming an organization of fruit growers to carry on the work of the state fruit growers conventions throughout the year is most excellent. There are many reasons why such an association should prove useful and beneficial to the industry. Lack of organization is indeed the one great weakness of all agriculturists. Considering the magnitude and importance of this industry and that California's fruit production alone aggregates over $100,000,000, it is astonishing that we are so far behind in state organization. In its representation in the legislature, there are a mere handful of men in each house who are practically or primarily connected with agriculture as a business. Because of this, our interests lack the consideration to which they are fairly entitled. Much has been done and is being done, but much more must still be done. In order to accomplish these things we must have organizations and through them the combined support of the whole industry. The creation of a state agricultural department, unifying all of our commissions and boards under the leadership of one able and

PRUNE TREES

Profit producers, and as reliable in horticulture as corn in agriculture. Prunes are a staple food article, and because the demand is growing the profit grows too.

Our parent trees of FRENCH, IMPERIAL, SUGAR, and ROBE DE SARGENT have been carefully selected from trees having the best record for PRODUCTIVENESS, QUALITY, AND SIZE OF FRUIT. ON BITTER ALMOND, PEACH, and MYROBOLAN ROOT. Order your trees from us NOW, and be sure of getting the best.

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Better, stronger Trees—Larger, finer Fruit—Bigger Crops.

Ground Limestone for Agricultural Purposes

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We quote as follows from the Kentucky Agricultural Exp. Station, Bulletin No. 84, under heading "Lime for Agricultural Purposes."

"Fresh burnt lime and hydrated lime may give better results the first year than ground limestone, but this is because of its caustic effects on the organic matter of the soil, causing a more rapid giving up of nitrogen. Experiments in Maryland and Pennsylvania show that used through a long period of time, the raw ground limestone gives the better results."

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French, Imperial and Sugar Prunes, Bartletts, Clings and Freestone Peaches, Plums, Almonds, Apricots, Figs, Apples, Grafted Walnuts, Grafted Resistant Vines, Rooted Table Grapes, Spineless Cactus. Special prices on application.

TABLE GROVE NURSERIES
Healdsburg, Calif.

well qualified man is an example of what needs to be done. We have now a number of small and unimportant boards, bureaus and commissions competing between themselves for appropriations, with of course very unsatisfactory results. The plan of forming an organization of fruit growers is excellent and I trust will be carried out.

Thos. F. Hunt

Dr. Hunt writes that in order to judge absolutely one would need to know of past experience and that there should be good reason for such a move, and adds: "I think, however, that the matter should be thoroughly discussed at the coming meeting at Los Angeles."

C. C. Teague

It would seem to me that it would be desirable to have a permanent fruit growers' organization to handle matters of state-wide interest to fruit growers which may come up from time to time between the regular state conventions, and to promote interest in these conventions.

F. B. McKevitt

I believe that the idea expressed in your editorial (California Cultivator, July 16) is decidedly a meritorious one, and some plan should be devised to work up an organization of horticulturists of this state on practical lines.

E. E. Luther

In reference to the horticultural society will state that I thought the Fruit Growers' Convention was stronger than any horticultural society in any other state that I know of. It might, however, be wise to incorporate this body. It might be stronger that way. However, in days gone past, it has been quite a strong organization. There is one point you must remember, that very few people desire to belong to a society of dues wherein they do not see immediate direct results. When this convention is held in different parts of the state local people, for that year, take a decided interest in it but after that little or no interest. It might be well to have a society distinct and separate from the State Fruit Growers' Convention, but I do not believe it would be the best policy to change the Fruit Growers' Convention into a "dues" society. I believe you well know the conditions which confront the organization of the same.

W. S. Guilford

The organization of such an association will be a wise move.

R. S. Vaile

When the suggestion was first made R. S. Vaile, secretary of the state association of County Horticultural Commissioners, wrote to each member of that association, and from his letter we quote:

"It has been suggested by the committee on arrangements for the 45th State Fruit Growers' Convention that there would be many advantages in organizing the agriculturists of the state in attendance at such convention into a more definite association, with regular officers, membership, fees, etc. The plan has been adopted in several other states and the association is of value in carrying out details connected with state-wide horticultural work. They also have a fund at hand from fees that may be used for the publication of reports, etc. It is thought by a great many that the reports of these conventions are of prime importance, but owing to the shortage of funds in the state commissioner's office their publication seems problematical. If such publication could be arranged through such an association that alone might well justify its existence. There are other points also, such as the "Eight-Hour law," which might be far better handled through a definite organization than through our present loose system."

LOUDEN BARN PLANS

Every reader of the Cultivator who has any idea of building a barn will receive some good ideas by studying Louden Barn Plans, published by the Louden Machinery Company, Fairfield, Iowa. It has a price mark of one dollar and is well worth it. We imagine any large buyer of Louden appliances, which are most excellent, might get a liberal publisher's discount. In any case write the company for information regarding the book and working plans and specifications which may be had complete for from five to ten dollars.

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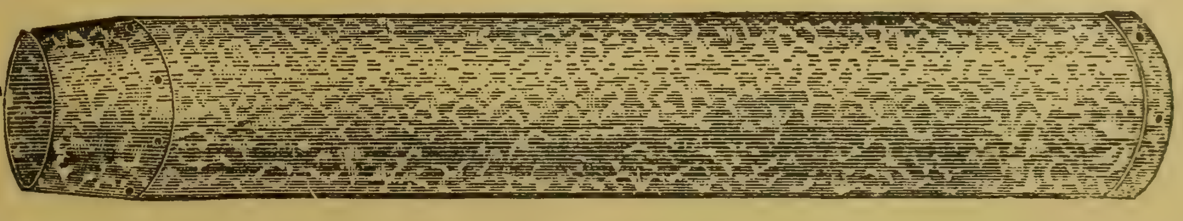

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Cuts from both sides of limb and does not bruise the bark.
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Our Duplex Garden Cultivator is TWO Cultivators in ONE at about half the usual price of ONE

EVERY HOME GARDEN
as well as every market garden may now be cultivated with this cultivator at a great saving of labor, for it is **easy to operate, inexpensive,** and of great capacity. Write for descriptive circular and special introductory offer and write to-day for it will interest you.
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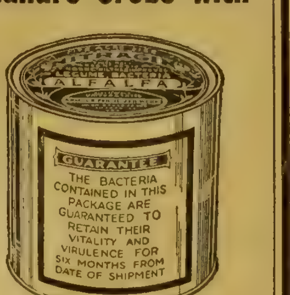
THE SIMPLEST SAFEST AND SUREST SYSTEM OF SOIL INOCULATION FOR ALL LEGUMES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THE BACTERIA CONTAINED IN THIS PACKAGE ARE GUARANTEED TO RETAIN THEIR VITALITY AND VIRULENCE FOR SIX MONTHS FROM DATE OF SHIPMENT

"NITRAGIN" is the wonderful germ that unites with the legume root and draws from the air the precious *nitrogen*—necessary to *all* plant life, health and growth.

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Alfalfa—You can't afford to risk failure on this wonder crop. For Alfalfa success, inoculate the seed with "NITRAGIN."

"NITRAGIN" invariably insures a perfect "catch," quick growth, enormous yield and extra food value.

Inoculate *all* legumes with "NITRAGIN" Pure Culture. A special strain for each legume—27 varieties.

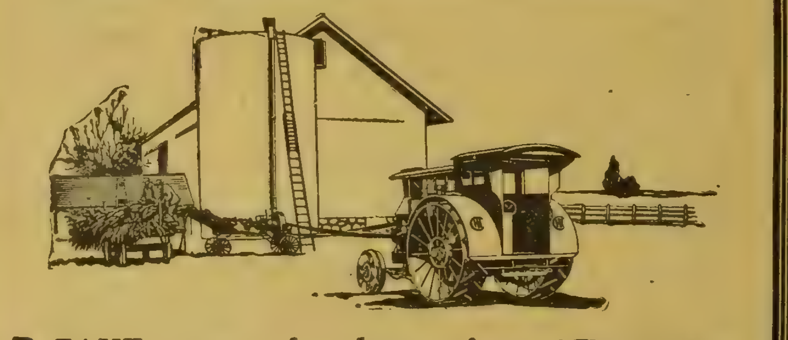
Pure Culture inoculation is endorsed by Government authorities, state experiment stations, practical farmers, agricultural experts and soil culturists. Let us send you testimonials and other *proof*.

Price: Garden size $1.00 per can; acre size $2 per can; 5-acre size $9 per can. F. O. B. Postage and express extra. Parcel Post, 10c per acre extra. Ask your seedsman or fertilizer dealer for "NITRAGIN."

Prepared in the Laboratories of the German-American "NITRAGIN" Company, Milwaukee, Wis.

Guaranteed and Distributed by **Armour Fertilizer Works** Los Angeles, California

International Harvester Tractors Solve Farm Power Troubles



MAKE a note of a dozen of your hardest and most troublesome farm operations and you will find that International Harvester oil tractors—Mogul or Titan—can be used with profit in all.

They furnish reliable power for all belt machines and for disking, plowing and other drawbar work. Features which make I H C tractors valuable are the truck design, the large mainshaft and its long bearings, the power starting system, the dust-proof engine—features of proved value which you find on all International Harvester tractors.

I H C tractors, Mogul or Titan, are simple, strong, and easily operated. They are built in all sizes, 6-12 to 30-60 H. P., and in styles to meet the needs of every farm. Be sure to see especially, the lightweight 12-25 Mogul, built for the small farm. This machine, equipped with our new self-steering device is a marvel of labor saving.

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Legal Queries

Louis B. Stanton, attorney, 243 Wilcox Building, Los Angeles, will answer legal queries in this department.

Immediate mail replies cannot be given except where fee to Mr. Stanton is paid. When replies are wished in Cultivator address query to 115½ N. Broadway, Los Angeles.

Employer's Liability

I hire a man to chop wood for me by contract, and he does his work by contract, paying no daily wages. If one of the choppers is injured would I be responsible under the employer's liability act?—Subscriber, Alta Loma.

Under the employer's liability act the term employe is defined as every person in the service of an employer under contract of hrre or apprenticeship, it excluding any person whose employment is not in the usual course of the business or occupation of his employer, and also excluding any employe engaged in farm, dairy, agricultural, viticultural and horticultural labor, in stock or poultry raising or any household or domestic service. Under the above definition it would be very clear that you would not be responsible in the above case.

Collecting for Pasture

A man left three animals on pasture with me five months ago and has paid nothing on the bill. I have written to the address he left, but letter has been returned unopened, and I can find no trace of him. What proceedings must I take to collect my bill? Must I advertise animals before selling them to cover pasture bill?—Subscriber, El Centro.

You have a lien upon the animals under Section 3050 of the Penal Code. If the value of the pasture is under $300 you may bring suit in the justice's court and have the animals sold to satisfy the amount due you for their pasturage, together with costs of the proceedings.

Settling Estate in Iowa

What is the law in Iowa in the settling of an estate where no will was made, where all the heirs are of age. Do the heirs have to begin settlement in a certain time? If so, what is the limit? Can one heir have an administrator appointed against the wishes of the rest of the heirs? Has the court power to appoint any one without the consent of the rest of the heirs? Can he administer on moneys of the estate and leave a farm to be disposed of by some one else, or should he go through with the whole affair? Also what per cent are administrators allowed for attending to it?—Subscriber, Fullerton.

The law of Iowa is somewhat out of the sphere of this column, but as the laws of all the states are very similar to that of California in respect to the questions here involved, the answers are made under the California law. The law fixes no time within which a petition for letters of administration is required to be filed. Administration must be granted only to residents of the state and in the following order and relationship; surviving husband or wife, or some competent person whom she or he may request; the children, father or mother, brothers, sisters, grandchildren, next of kin, public administrator, creditors, any person who may be competent. The court has power to appoint any person petitioning, being otherwise qualified, without the consent of others. All property belonging to the decedent must be administered, and the administrator would be liable upon his bond if some of the property of the estate was disposed of by some one else. The compensation of the administrator is as follows: On the first $1000, 7 per cent; on the next $9000, 4 per cent; on the next $10,000, 3 per cent, and so on.

Contract to Buy Water

A has signed contract to buy water from B for two years. Before contract expires A sells property to C, who does not want water. Does sale release A from holding contract? If not, of whom can B demand the fulfillment of contract? Can he take a lien on the property? Would such a contract be an incumbrance on property? Is a right of way an incumbrance?—Subscriber, Pond.

Whether your contract is or is not one which could be considered a covenant running with the land, depends entirely upon the terms of the contract. To entitle you to a lien upon the property your contract should fall within the following definition: "A covenant made by the owner of land with the owner of other land to do or refrain from doing some act on his own land, which is expressed to be for the benefit of the land of the covenantee, and which is made by the covenantor expressly for his assigns or to the assignes of the covenantee runs with both of such parcels of land." If your contract does not fall within the above definition, you may nevertheless hold the party agreeing to buy water for the profits to be derived from the sale of water to him.

Road Right of Way

A.'s and B.'s land join. A road passes through both places and also across one end of C.'s. A. and C. want a road cut to eliminate all gates, but B. will not consent. The supervisor says that the expense would not be justified by the travel of same. What can A. and C. do to get a road out? The road in question had been traveled for nearly 30 years with from three to five gates to open and shut, but these have never been locked. B. has threatened to lock gates and close road. Can he or not?—Subscriber.

The fact that gates had been placed across the road would tend to show that any use of it by the public for a way was only permissive and a strong evidence and support of a mere license of the public to pass over the designated way. It is essential in order to establish a public way that there be a dedication thereof. A dedication exists only when the owner of the land has manifested some intention to make the dedication, and where the dedication of a highway is sought to be that such use was with the knowledge of the owner or with consent or without objection upon his part. The question of the remedy at law to enforce your right of way depends somewhat upon the original conditions of acquisition, and title to the respective properties. If the road has not been dedicated, either by written act or by sufficient use, the gates may be locked. If it has ben so dedicated, you are entitled to the free use of the road. The question rests so much in evidence that it is impossible to give a more definite answe rthan the above.

Payments on Contract

A friend and I each bought five acres of land under contract. My friend could not make the payments, so to protect him I informed the man from whom we bought the land that I had bought the contract from my friend and would make the payments on same. Contract is still under my friend's name. Agreement to pay was only verbal to the land holder. Now I can't make the payments for both contracts, due Nov. 1, myself. Could I compel owner of land to apply the payments, principal and interest, which I made on my friend's contract, to my contract of five acres?—Subscriber.

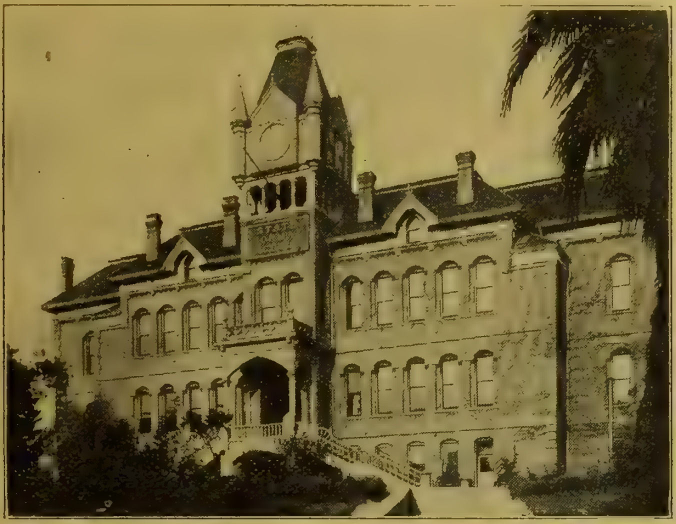
You cannot compel the owner of the property to apply the payments which you have made upon your friend's contract to your own. Your only right, if you have any at all, is to require your friend to repay to you the money advanced for his benefit. The land holder cannot force you to pay further upon your friend's contract as your agreement to pay thereon was verbal and contrary to the statute of frauds.

State Fruit Growers Convention

Exhibition Planned Which Will be Almost Equal to That of an Agricultural Fair. Plans Made for Greatest Fruit Growers Convention Ever Held in the State.

AN exhibit almost equal to the State fair will be a drawing card at the State Convention. Some 5000 or 6000 square feet of exhibit space is already engaged, and some of it filled.

The exact location is the former State Normal building at Grand Avenue and Fifth Street, Los Angeles. Every attendent is urged to go first to the Hotel Clark, Hill Street between Fourth and Fifth Streets, and register as an attendant at the Convention.



STATE NORMAL BUILDING
Fifth street and Grand avenue, Los Angeles, where sessions of 45th State Fruit Growers' Convention will be held.

LOBBY OF HOTEL CLARK
Headquarters for delegates at state convention. Information bureau located near door.

A feature which it is hoped will be instructive is being worked out—if it will fit in with the rest of the program. This will be a trip to the state exposition building located in Exposition Park near the University of Southern California. The state has a great property in this, which was formerly the sixth district fair grounds. One building costing a quarter of a million is being filled with exhibits and is well worth the visit.

A big banner at the head of Fifth Street locates the convention. One cannot miss it.

The Woman's Department af the State Fruit Growers' Convention will prove most attractive and should greatly increase the attendance by Mrs. Orchardist accompanying Mr. Orchardist to Los Angeles for a bit of an outing. Home economics, methods of simplifying home work and opportunities for women in horticulture, will all be discussed.

Two practical farm women who won many most commendatory notices because of their addresses at the last state fruit growers' convention, Mrs. Nielson of Sebastopol and Mrs. Roberts of Grass Valley, are coming from the north end of the state to address the convention. Mrs. Nielson will speak of her work of jelly making and looking up a market to handle her product. She has made a success as has Mrs. Roberts. The latter secured her market in the Hawaiian Islands. These addresses alone should bring out many farm women of California.

Railroad rates are always interesting. In this case fare and a third will prevail and to secure advantage of it every purchaser of a ticket on a steam road should buy his ticket one way and insist on having a receipt, which, when validated at the convention, will entitle him to return fare of one-third.

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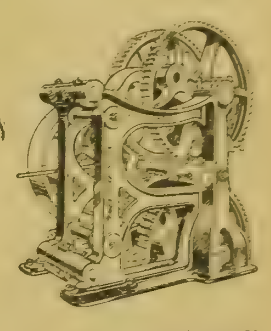

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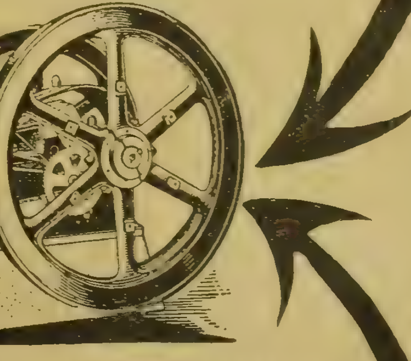

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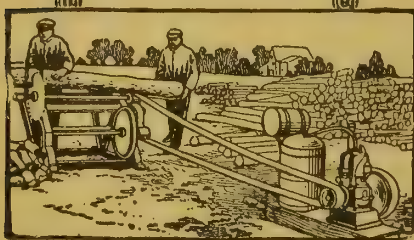

Bulbs

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List with prices on over 200 varieties free upon request.
THE DEAN IRIS GARDENS, Moneta, Cal.

The Lawn and Flower Garden

THIS MONTH IN SOUTHERN CALIFORNIA

Written for the California Cultivator
By O. M. Morris

BULBS are the principal item of interest just now. All the winter and spring flowering varieties should be planted as soon as possible. Contrary to expectation, the European war has not affected the bulb market to any extent and all varieties and classes have arrived without delay.

Probably the most popular of the Dutch bulbs is the daffodil which thrives perfectly in most situations, blooming satisfactorily under all sorts of conditions. The Spanish iris is a close second, being easily grown and a splendid cut flower. These come in white and all shades of yellow and blue. They should be planted this month for February and March flowering.

Hyacinths and tulips require a little more care than some of the other bulbs but, if planted under proper conditions, give blooms which are very acceptable for table decoration.

All the annuals may be planted this month. Many of the seedsmen have prepared for their customers a wild garden mixture for broadcasting in vacant spaces to take the place of weeds and rubbish heaps. If possible these plots should be plowed or spaded up to get rid of as many of the weeds as possible, then broadcast the seed and rake in, or it may be sown in pots or borders as a mixed wild garden for winter and early spring flowers.

Large plantings of poppies are being made in most all districts to make the country attractive to the tourists who visit this section during the winter months. Poppies will reach the blooming stage in about three or four months. It is advisable to plant as soon as convenient, first thoroughly wetting the ground and working it up a few inches, then sow the seed broadcast and rake in. The seed will start quickly and be well along for the early winter.

For a supply of winter cut flowers, centaurias, scabiosa, pansies, stocks, calendulas, calliopsis, candytuft, gaillardia, gypsophila, mignonette and schizanthus are indispensable. They require from three to four months to come into bloom and should be planted at once. For bedding plants pansies, daisies, pinks and linum, or scarlet flax, should be planted, and strong plants of campanula and digitalis should be set out in permanent borders if not already out.

One of the newest pinks is the sweet william, or the early flowering annual variety. This blooms in about three and one-half months, the heads are larger and the flowers more full than the old type of sweet william and their early blooming makes them particularly fine for cut flowers. Being perfectly hardy they are an important acquisition to the list of winter bloomers. This plant is a hybrid between the barbatus and plumarius pink, having its general appearance like the sweet william and the individual flowers being an average in size between the two parents, giving a larger flower than the sweet william, with the characteristics of the other parent. It should be planted by everyone wishing early flowers.

CULTURE OF LAVENDER

Lavender likes a light open soil, even when sandy or stony, and free sunlight. The plant is usually propagated from cuttings of one season's growth, cut with a heel, and planted in spring or fall. These are set three to four inches apart in rather moist soil and shaded until they root. Division of the plant is also practiced, but commercial growers think plants thus obtained are less robust and more susceptible to disease.

In commercial culture the young plants are set out in rows running north and south, six feet apart, the plants four feet apart in the rows. Clean cultivation is given. The plants are clipped to prevent flowering the first year, after which they bloom till five or six years old. Lavender is not heavily fertilized, but a light dressing of stable manure or wood ashes may be applied in the fall. Lavender is said to do well commercially planted in California. The world's lavender crop is chiefly produced by England and France.

MADERA COUNTY FARM BUREAU

Farm Adviser T. C. Mayhew writes: "My schedule of visits for November is as follows:

Chowchilla, November 2, 3, 4, meeting November 2; Madera, November 6, 9, 10, meeting November 7; Dixie Land, November 11, 12, 13, meeting November 11; Fairmead, November 16, 17, 18, meeting November 16; Oakhurst, November 20, 21, meeting November 21; Nipinnawasee, November 23, 24, meeting November 24; Coarse Gold, November 25, 26, meeting November 25; Northfork, November 27, 28, meeting November 27.

An all-day meeting of the valley centers of the farm bureau will be held at Fairmead November 7. Prof. J. I. Thompson of the university farm will speak on the pork industry. Mr. R. M. Roberts, agricultural demonstrator for the Santa Fe Railway Company, will speak on fruits. At this meeting the subject of incorporating the farm bureau as a buying and selling association will be taken up.

A like meeting of the mountain centers, Oakhurst, Nipinnawasee, Coarse Gold and North Fork, will be held at Oakhurst, November 21. Prof. B. H. Crocheron, state leader, will speak on the work of the farm bureau. Mr. R. H. Taylor, assistant pomologist, university farm, Davis, will speak on apple culture.

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Our Bulbs have arrived—all of them—better, larger, finer Bulbs than ever delivered before.

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is now ready, describing all the latest novelties. The war has caused Holland bulb producers to send to us all those choice bulbs which were heretofore sold only in Europe.

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None better for profit, and you'll get the best trees grown if you order from us NOW.

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Red, Black and Purple Scale also the Red Spider and other insects, worms and bugs.

Does not hurt the plant or tree.

Quart, 20c; 2 quarts, 35c; gallon, 50c; 5-gallon can, $2.00, freight paid.

Special prices by the barrel.

Correspondence solicited.

West Coast Seed House
116-118 East 7th St.
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A bale of cotton is on exhibition in Calexico, which was grown from seed of cotton ginned June 17 of this year.

Small Fruits Vegetables

THIS MONTH IN THE SACRAMENTO VALLEY

Written for the California Cultivator
By S. S. Rogers

IN a recent issue of the California Cultivator the subject of growing winter onions in the Sacramento Valley was mentioned, and directions were given for planting the seed and growing the young plants up to the time they were large enough to set into the field. From the middle of November to the middle of December the plants raised from seed planted during September and October should be transplanted into the field. At this time they should have grown to about the size of a lead pencil, which is the best size for transplanting. Before setting the young plants in the field the soil should be thoroughly worked, turning under all the weed growth, having the surface soil in a fine mulch and free from clods. The moisture should be such that the soil is moist to the surface. There are several methods for transplanting the young onions into the field. Two of the most common ones are here given.

Where horse cultivation is to be used, the onions may be set in rows two and one-half or three feet apart, but where the cultivation is to be done with hand implements, the rows should be about one foot apart. Many of the growers plant the onions in sunken beds, which aids greatly in irrigation. Whichever method is pursued, the care and planting of the crop is the same.

Transplanting the Young Plants Into the Field

A few hours before the young onions are to be removed from the beds the soil should be thoroughly wet, which aids in preserving the young roots when the plants are being removed. Many of the growers make a practice of pulling the plants by grasping the stems, although it has been found that a much better method is by digging the plants with a hoe or shovel, preserving many of the smaller roots which would be destroyed if the plants were hand-pulled.

After removing from the seed bed the tops and roots should be pruned so that the plants are about five inches tall. They should be planted as soon as possible into the field, setting them shallow in the soil. Under ordinary conditions they should not be planted over one-half an inch deep. If the plants are set too deep the bulbs will not form upon the surface as they should, which makes them ill-shaped. If they are not set deep enough there will be difficulty in getting the plants started. In a few days after they have been transplanted and have commenced to grow, the soil should be thoroughly cultivated, not allowing the weeds to start or the ground to pack too much around the plants at any time throughout the season. The exact number of cultivations and hand-hoeings which the field will need, depends wholly on local conditions. When the majority of the tops begin to dry the crop is ready for harvesting, and this operation will be discussed in a future issue.

The above method for the production of onions is carried on when only a small amount of land is devoted to this crop. Where many acres are used for the production of onions, the seed is generally sown directly into the field during the winter or early spring. The future cultivation of onions grown from seed is exactly the same as when the young plants are transplanted. If the land is free from weeds the seed may be sown during December, but if there are many weeds sowing should be deferred until the weeds have become well started, plowed under and rotted. This generally means during January or February.

The planting calendar for this month is the same as for the month of October.

THIS MONTH IN SOUTHERN CALIFORNIA

Written for the California Cultivator
By O. M. Morris

Planting operations for November are practically the same as those for October, though with the more tender plants such as beans we should make only small plantings, providing the location is somewhat protected and on high ground. These should, however, be put in at once. The early bush varieties require about two months to reach proper condition for table use. Most of the other vegetables, such as beets, carrots, Brussels sprouts, endive, cabbage and cauliflower, lettuce, leeks, onions, parsnips and parsley, peas, spinach and turnips are perfectly hardy and can be planted with absolute safety in almost every district of the southern part of the state.

Peppers and tomatoes are now being planted in protected beds for early planting but it requires considerable care to keep these growing during the colder months and it is only practicable to grow them under cover, potting up or boxing off during the colder months for early planting out. Tomatoes, especially, cannot be grown well in flats and should be potted if started at this time. They will then make thrifty plants by the time frost is over. Peppers, however, can be handled very well in flats or boxes but should not be planted too thickly as they require plenty of room to make strong stocky plants. These should be ready to set out by the last of February.

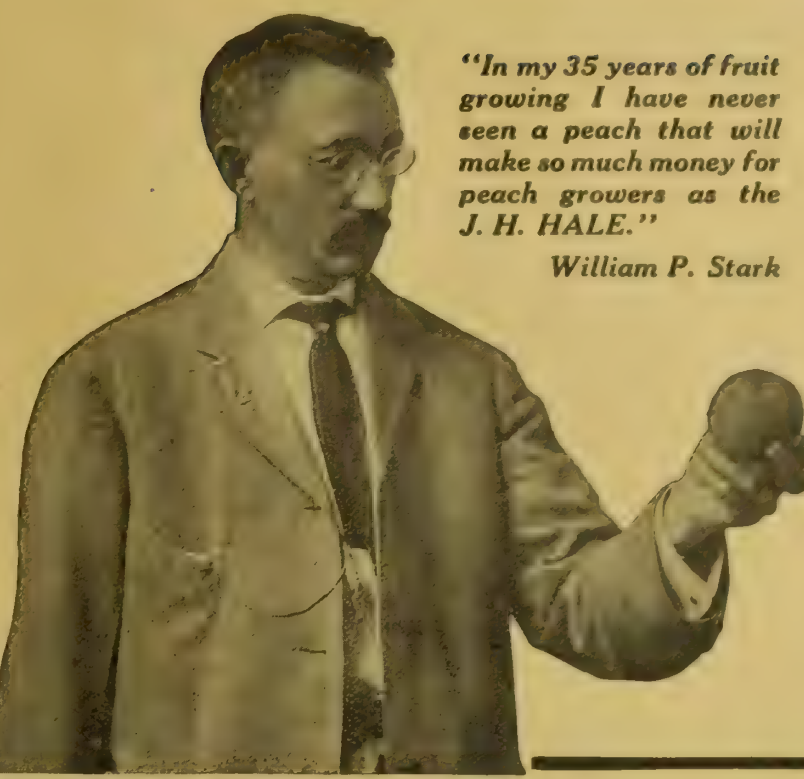
Those who have had trouble in growing spinach during the heat of summer should not forget that this is the season for the best development of this vegetable, as it thrives perfectly during the colder months.

The chayote is now coming in in considerable quantity. If one wishes to plant these select good ripe fruits and put in soil, a five-inch pot would be preferable, laying the fruit in lengthwise with seed end slightly elevated, covering about one-half or three-fourths over. The pot should be placed in a warm situation under a shed or in some place where it will not get the winter rains. A little water once in a while is all that will be required until well established, and then more water may be given. Too much watering before growth starts and too early planting in the open ground will result in failure. The fruit is the seed and if too much water is given it will destroy all prospects of growth.

Endive as a salad plant is not fully appreciated in this country. It is used extensively by the Europeans and its spicy flavor is a delectable addition to a salad.

Garlic has been an exceptionally profitable crop this year, bringing wholesale from $15 to $20 per hundred pounds. In fact, there has not been enough grown locally to supply our market and large quantities have been shipped in from Texas and the South. For early spring crop plant during the next month or two. For best development it should be planted only on loamy or sandy soil.

Winter radishes or the large white and black late developing varieties, such as Machado or Mammoth California White Winter should be planted. These grow to large size, weighing a pound or more, and require from two to three months for development, twice or three times longer than the earlier varieties.



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No Peach Before With *All* These Features

Immense size like small cannon ball
Round, globular shape
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Perfect freestone—meat of a cling
Ideal canner—holds shape—doesn't rag
Ripens 5 to 7 days ahead of Elberta
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Large size, costs less to handle
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Fills crates faster, bigger profits
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Brings 25% to 50% higher prices

In the J. H. HALE you have a peach of better quality than the Lovell or Crawford, a far better shipper than any known freestone, of better flavor for canning than Lemon Cling, and heavy and sweet for drying. Peach growers who have seen the J. H. HALE fruiting in Mr. Hale's orchards say: "Largest and most beautiful peach I ever saw." "More profit in the J. H. HALE trees if they cost $5.00 each than other varieties for nothing." "We can't grow other peaches and compete with this in the markets."

Shrewd fruit-growers are jumping at this opportunity. Thousands of J. H HALE trees were planted in California last year. Our supply of trees is limited. Every mail is crowded with orders. Reserve your trees NOW. Take the *early* profits!

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Mr. Hale has appointed us exclusive distributors of this wonderful peach. All trees are propagated from buds cut from his bearing orchards. Be on your guard against irresponsible persons offering worthless varieties as the J. H. Hale. To get genuine J. H. HALE peach trees address *Wm. P. Stark Nurseries, Stark City, Mo.*

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Safe delivery guaranteed to all California and Western points. Our trees pass all requirements of inspection laws. Customers say: "Trees received in better shape than I can get stock here." "Fine stock and in excellent condition." "Thanks for generous treatment and fine large trees." Write for 120 page catalog.

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A Journal of Horticulture and Agriculture

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Thursday, Nov. 5, 1914

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We guarantee our subscribers against loss through dishonesty of any advertiser in the Cultivator. We do not attempt, however, to adjust trifling differences between subscribers and honest, responsible advertisers, nor will we pay the debts of honest bankrupts. Notice of complaint must be sent us within 30 days from date of the transaction, and the subscriber must have mentioned the Cultivator when writing the advertiser.

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Americans send $100,000,000 abroad to buy sugar. To pay for this requires the product of 7,100,000 acres of wheat, and less acreage than that would produce all the sugar America needs. It is unfortunate that the sugar industry has been discouraged as it was by tariff action, but perhaps the restriction of European production may overcome any adverse tariff and the country be given a great impetus. In any case we can help it along by eating our own California made sugar.

CONSOLIDATE

At the recent International Irrigation Congress held in Calgary a resolution was passed endorsing the amalgamation of the International Dry Farming Congress and the International Irrigation Congress. Of course if taken literally, these two great organizations are working along diametrically different lines, but in reality they come so close together in many points that it certainly would be wise to center their energies in one great gathering. Perhaps the greatest work of either of these organizations should be along legislative lines and there should be no conflict between them in this matter. Strength should be added by such a movement.

FALL IRRIGATION

Too many of our orchardists have an idea that once the fruit is gathered from the trees there is no further need for application of water until the approach of another fruiting season. This is true with garden or annual crops, but a fruit tree needs satisfactory environment the year through. Even when perfectly dormant in midwinter a tree requires some moisture in the soil and if deprived of that moisture its tissues will suffer. But especially at this period of the year is there need of moisture in the soil to allow the fruit buds which are forming for next year's crop to secure sufficient nutriment to give all possible vigor. The soaking irrigation given early in the summer may not be necessary or even advisable, but sufficient to keep the trees in a healthy condition is given by every fruit grower who anticipates a heavy crop next year.

SAVE THE WASTES

The potato is one of the favorite productions of the Germans and has been one of the most profitable, though in recent years the increase in yield has become so great that over 16,000,000 tons go for cattle feeding. With a production totalling 40,000,000 tons, waste and loss was liable to occur, but to correct the matter potato drying factories have been established, the output of which has increased three and a half times within the past five years. One and a half million tons produced 400,000 tons of dried materials. These dried potatoes have been shipped the world around. We are glad to note that experts of the United States department of agriculture and others are studying this question of wastes in California. Thousands of tons of fine fruits go to the dump every year because of lack of attention. Let us study every possible means for using up these wastes.

STATE CONVENTION

The committee of arrangements has practically completed its work of preparing for the great convention which will be held in Los Angeles next week. The assembly room has 1004 chairs, besides capacity for many others as found necessary. Best of all, the committee has arranged for an exhibit of orchard appliances, and the grounds surrounding the Normal building and several thousand square feet of space inside the building will be given over to exhibits of orchard products and orchard implements. There will be several tractors as a part of the outside exhibits. No prizes are given and no charge whatever is made for space to the exhibitors. The exhibit is merely educational and intended to bring together the orchardist and those who would serve him. We do not believe a better opportunity was ever offered to the fruit grower to gather a great fund of information during a short time than during the six days of the week beginning November 9.

SETTLERS SHOULD KNOW

Settlers and homeseekers in any new country should know vastly more than they usually do of the conditions they are to meet, which are so different from those in the section their farming experience was secured. Of course as a general proposition, that statement applies to all of us as well, but there have been so many glowing advertisements of producing conditions in California that the prospective settler has learned to look with too hopeful eyes and jump too quickly at conclusions, taking up a line of work for which he or the soil or the climatic conditions are not fitted.

To correct this, the University of California, or, more particularly, Dr. Thos. Forsyth Hunt, has issued Circular Number 121, "Some Things the Prospective Settler Should Know." Many of the facts here given are those presented to the State Fruit Growers' Convention held in June, and now gathered together in this book of 60 pages. Its usefulness is not confined to the prospective settler, for there are many points brought up in this book which are educational, even to the native Californian. Dr. Hunt has looked at conditions which confront the farmer and has presented his facts in a way that will cause all to use the pencil and do the business man's stunt of figuring a little on overhead expense and some other which is sure to come with every farming operation.

This publication may be had by any Californian who will write Agricultural Experiment Station, Berkeley.

HORTICULTURAL ASSEMBLY

About a year ago Dr. Herbert J. Webber, in charge of the citrus experiment station, called a gathering of fruit growers at Riverside and announced it as the First Annual Horticultural Assembly of the citrus experiment station of the University of California. Naturally plans were begun for the second annual which should occur this year at about this time or early in December, but conflicting with this was the 45th State Fruit Growers' Convention which, for the first time in many years, was scheduled to be held at its fall session in Southern California. To avoid duplication of conventions Dr. Webber merged the Horticultural Assembly with the State Fruit Growers' Convention and, instead of being held on the grounds of the citrus experiment station at Riverside, it will be held in the old state normal building on the corner of Fifth Street and Grand Avenue, Los Angeles, next week. Of course there has been material enlargement of the plans of the first assembly, and with the addresses which will be made by the staff of the experiment station and members of the force of the department of agriculture and the University of California, there will be an exhibition of many products and appliances connected with orcharding. The principal feature of this exhibit will probably consist of by-products of the citrus. There will be much that will be educational in this exhibit, and every Californian who possibly can should attend and give time to the study of this exhibit and hear the discussions.

Agricultural Notes

During the month of September motor vehicle registrations were received for this state at the rate of 138 per day.

The National Dairy Show is on in Chicago. It will continue all the rest of the month. There is a large attendance from all over the country.

The world's record for the output of sugar for any one factory is held by Chaparra in Cuba, which has brought its 1913-14 crop to a close with a production of slightly above 611,000 bags, or 87,300 long tons of sugar.

For six years the government has been battling with the tick problem of the South and the states affected have cooperated so well that the quarantined area is gradually being lessened and cattle raisers are putting in their pockets profits which formerly went to fatten ticks.

In England the local authorities are empowered to inspect herds of dairy cows and may order the slaughter of any animal that shows evidence of tuberculosis or even of any diseased condition of the udder. Compensation is given on a sliding scale, the amount granted varying with degree of infection as determined by post-mortem examination.

The Security Trust and Savings Bank has more than 88,000 depositors.

Think of it—as many depositors now as Los Angeles had inhabitants in 1890!

It shows how the public appreciates the great strength and superior service of the oldest and largest savings bank in the Southwest.

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Write for full information about how to bank by mail.

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EQUITABLE BRANCH
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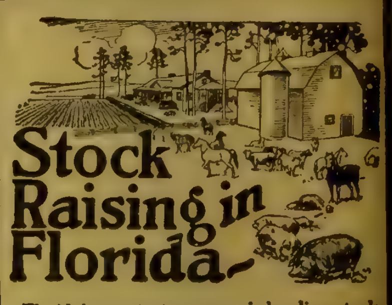

Stock Raising in Florida

Florida's greatest resource is her live stock. You can raise, fatten and market stock at BAY VIEW at a fraction of what it will cost you here in the North. Equally as good for dairying. Ready markets and good prices. Grass for pasture the year round. Don't have to stable and dry feed six months in the year.

Soil is deep, rich, sandy loam—very exceptional for Florida. Sample of this soil mailed free with literature. Plenty of rainfall 12 months in the year. Irrigation is unheard of. Crop failures practically unknown. Two and three crops easily raised each year on the same ground. $50 to $500 profit per acre each year. Satsuma oranges, figs, pears, peaches, plums, grapes and all kinds of berries produce abundantly. You can also raise enormous crops of corn, oats, hay, Japanese cane, clover, sweet and Irish potatoes, sugar cane, celery, tomatoes, lettuce, cabbage, watermelons, cantaloupes, egg plant, cucumbers, radishes, turnips and all kinds of early profitable vegetables. One of the finest climates in the United States, both summer and winter. No sunstrokes in summer—no frostbites in winter. Ideal salt water boating, bathing and fishing. Lumber at wholesale prices. Good stores, churches and schools. WRITE TODAY FOR FREE BOOK, SAMPLE OF SOIL, MAPS, ETC.

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1000% Returns From

the use of a Hercules Stump Puller. Bumper crops instead of stumps. Big money in place of taxes. $1,200 from 40 acres the first year—$750 in extra crops every year after. Get the catalog of the

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You can clear an acre of stumps a day. 30 days' free trial. Guaranteed 3 years. Special introductory price proposition. Write today for big free catalog.

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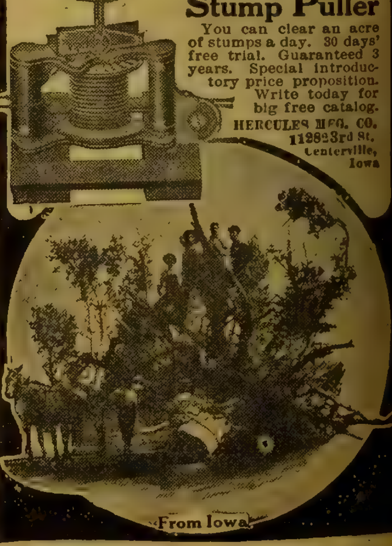


Agricultural News Notes of the Pacific Coast

Northern California

Glenn County is entering upon a farm bureau campaign. Many members have already been secured.

County Horticultural Commissioner Stabler of Sutter County is waging determined war on Russian thistle.

The supervisors of Nevada County have passed a drastic ordnance against the shipping into that county of infected trees or plants.

County Horticultural Commissioner Lyons of Lake County reports the planting of 126,908 deciduous fruit trees in the past four years.

Hop growers of Mendocino County have organized a selling association which will affiliate with similar organizations in Oregon and Washington.

Jersey breeders of Humboldt County have organized an association, electing Dr. Harold Gross of Eureka secretary and S. P. Kelly of Ferndale secretary.

The State Dairy Association and the California Creamery Operators, which recently met in joint session at Modesto, have decided to meet next year in San Francisco.

At the recent meeting of the Humboldt County Dairymen's Association at Ferndale, Farm Adviser Christiansen discussed the advantages of tuberculin testing for dairy cows.

Many entries are being received for the poultry show to be held at Sacramento the first week in November. N. E. Luce of Los Angeles and C. G. Hinds of Oakland have been selected to judge poultry.

Central California

Lemon Cove, Tulare County, reports an unusually fine crop of oranges.

According to recent reports more than 75 per cent of the raisins of Tulare and Fresno Counties have already been contracted.

The women's clubs of Exeter, Tulare County, will hold a chrysanthemum show beginning November 5 and continuing three days. Entries are being made from all parts of the county.

More than 50 per cent of the raisin crop under the control of the California Associated Raisin Company has already been sold. The association markets about 90 per cent of the entire raisin crop of the state.

Hog raisers of Stanislaus County held a meeting in Modesto last week to consider organization for the purpose of fighting cholera. The idea of this organization is to prevent the spread of the disease rather than to cure it after it appears.

A shipment of sugar cane seed is en route to Visalia from Arizona and will be immediately planted by ranchers who have signed for it. The seed to be received will plant about 15 acres. The shipment is merely an experiment to see if the growing of sugar cane in the county can be accomplished.

Over 20,000 pounds of Fresno raisins were shipped to Copenhagen last week as part of a cargo of dried and canned fruits. This shipment was very much lighter than is usually needed to fill the Danish demand for California raisins. On account of the European war it is thought that no larger orders will be received.

Southern California

Calexico's new cotton compress is now ready for business.

There was a large exhibit of pigeons and rabbits at the Riverside county fair.

Dried fruit growers of Southern California are hoping for a big demand next year from Europe.

The Arlington Heights Fruit Association has elected the following directors: W. G. Fraser, W. H. Robinson, J. H. Urquhart, B. K. Marvin and F. A. Little.

The Santa Ana chamber of commerce announces that some 35,000 red geranium plants are ready for distribution to be planted along the highways of the county.

The olive crop in Southern California is estimated as 75 per cent of normal with promise of excellent quality. The output of the state will total about 15,000 tons.

Chili pepper growers of Orange County are planning to form a co-operative marketing association. A meeting was held recently at Garden Grove to inaugurate the movement.

At the close of this season's run on refined sugar the Anaheim factory expects to continue the run some four weeks to turn out brown sugar. It is thought that some 4,000 sacks will be manufactured.

Farm Adviser Parker of Ventura County announces that the bureau will conduct a market exchange. Any member of the bureau having an article for sale may list it with the adviser at Ventura.

The Coast

Wenatchee, Washington, is shipping out 100 carloads of apples daily.

Utah wool growers have practically completed arrangements for the meeting of the National Wool Growers' Association, which will be held in Salt Lake November 10-14.

Cattlemen of Cochise, Santa Cruz and Pima Counties recently met at Turner, Arizona and organized an association to protect and promote the interests of stockmen.

A Japanese farm corporation has been formed at Ogden, Utah, under the name of the Yamato Land and Trust Company. Members of the company are all Japanese.

The officials of the Arizona Cattle Growers' Association are expecting an attendance of 500 at the annual convention which is to be held in Douglas January 4, 5 and 6. The question of leasing the state grazing lands is expected to be the principal topic of discussion.

The National Mohair Growers' Association has just held its annual meeting at Albuquerque. The following officers were chosen for the ensuing year: President, A. B. Collins, Laguna, Texas; first vice-president, Mrs. M. Armour, Kingston, New Mexico; second vice-president, O. F. Webster, Thatcher, Arizona; third vice-president, John Mahnke, Kelseyville, California; secretary-treasurer, J. E. McCarty, Bluffdale, Texas. The meeting will be held next year in San Francisco.

Our Fruit, Nut and Olive Trees and Grape Vines were awarded the First Prize and Gold Medal at the

1914 STATE EXPOSITION

PRIZE TREES

WHY?

Because we have always been striving for the best and consequently have produced the best.

It was not luck—
To get that prize we had to work hard and conscientiously to produce just what you—the growers—want.

Into the growing of each one of our trees go science, care, and experience. By the intelligent selection of buds and parent trees, by expert application, and because we are located in a foothill district—free from pests—we produce hardy, well rooted—good bearing—disease free—trees—

Better, stronger trees—Larger, finer fruit—and Bigger crops.
All our trees are prize trees—profitable trees, the kind you want.
Buy foothill grown trees. We can supply the best of everything in all varieties.

WHAT ARE YOU PLANTING?

Olives
Apricots
Apples
Pears
Plums
Oranges
Prunes
Walnuts
Pomelo
Peaches
Clingstones
Freestones
Grapes

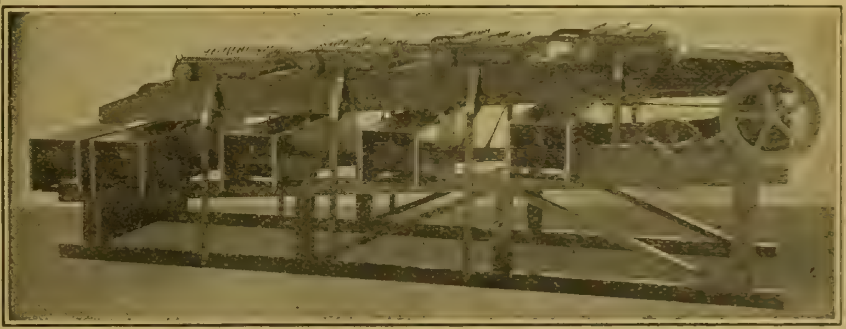
Think up your wants and tell us.

ASK FOR THIS.

Just say that you want it and we'll send you our catalogue of the best varieties of fruit and nut trees—full of useful horticultural information. Free for the asking.

Fruit Tree Specialists **The Silva-Bergtholdt Co.**
BOX A NEWCASTLE, CALIFORNIA

Grade Your Olives Yourself
and Increase the Value of Your Crop



The Schmeiser Olive Grader

This machine is built in three sizes—separating the olives into three, four and five grades.
The LARGEST or EXTRA FANCY GRADE is separated first, which absolutely prevents their being bruised. This enables you to get the best prices for your crop.
When you sell your olives in bulk the cost of separating, plus a good percentage, is deducted by the purchaser before he makes you an offer.
Why not grade yourself, save some of this cost and entirely eliminate the percentage.
The three-grade machine is operated by hand power.
Write for prices, terms and information.

Schmeiser Manufacturing Company, Davis, Cal.

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To operate at *full efficiency* and deliver *all* the cream, your separator must be lubricated with an oil exactly suited to its construction. Many oils form "gum", thereby clogging the delicate mechanism of the separator, and thus causing irregular spinning of the bowl, reduction of speed and consequent loss of cream.

Standard Hand Separator Oil

is made especially for cream separators by oil experts of 40 years experience who have studied the detail construction of the separator—this in order to produce an oil exactly adapted to the purpose. Your separator will do better work, last longer and need fewer repairs if lubricated with Standard Hand Separator Oil. ***No matter what you pay, you cannot buy a better oil for the purpose.*** Dealers everywhere.

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All sizes and dimensions made to order for your particular conditions.

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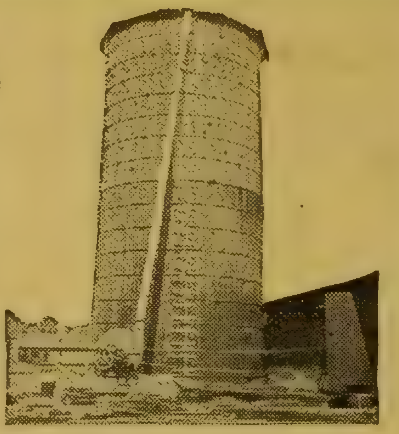

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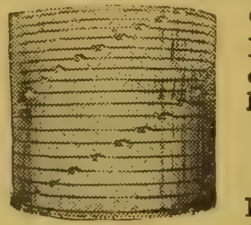
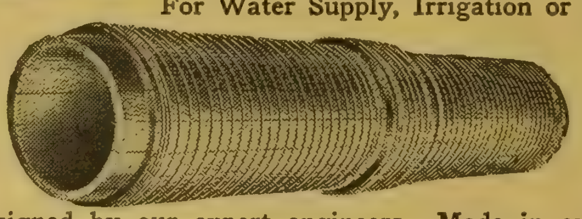


Built to suit All Uses and Users. Cheaper than Metal Tanks, last 10 times as long.

PIPE

Machine Banded or Continuous Stave. For Water Supply, Irrigation or Power.



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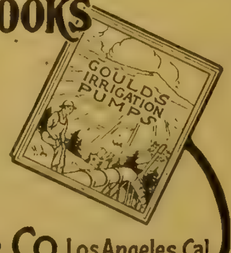
SPRAYING AND IRRIGATION BOOKS FREE

Not mere booklets, but two complete up-to-date books, full of valuable data on these important subjects. No rancher should be without them.



228-238 Central Ave. **SMITH-BOOTH-USHER CO.** Los Angeles, Cal.

Live Stock and Dairy

LIVESTOCK VERSUS GRAIN AND OTHER OBSERVATIONS

By Sacramento Valley Contributor

THERE is a big ranch in the Sacramento Valley on which a big crop of grain was raised this year. The soil is good and the yield was heavy. In the growing of grain there is a big cash outlay and a comparatively large force of men is necessary at certain seasons. When one grain farmer needs men every other grain farmer in the vicinity has the same need. Consequently wages are high. And when work is plenty laborers are independent. "We keep three gangs in motion when we are busy, one coming, one at work and one going in the busy season," said one of the foremen on this ranch, "and none of them are willing to give a dollar's worth of work for a dollar."

Some of the land on this property produces good alfalfa without irrigation; other parts have irrigation available. As fast as it is possible alfalfa is being planted and stock is being taken in to pasture on it.

A fee of from three to seven cents per head per day is charged for cattle, depending on the size of the animals, and pure water is provided. The fields to be pastured are indicated by the owner so that there is no danger of overgrazing and injury to the land in wet weather, etc. There are many fields that can be pastured 200 days in the year—most of them more—and at least one head per acre can be carried during this time. A conservative estimate of average returns would be 200 days at five cents per day, or $10 per acre annually. And this with very little expense, because a foreman and one man can look after the gasoline pumping engines and repair fence on several hundred acres.

With this system carefully followed out the land is enriched, for nothing is taken off save in the carcass of the animals, and when the time for more intensive cultivation comes a good foundation for a long cropping system has been laid.

Interest in Silos

The interest that is being taken in silos in the Sacramento Valley this fall is very pleasing to all who have known what a great factor in the profitable development and advancement of the dairy industry in the eastern states the silo has been.

A number of silos have been built and filled with corn, and more are contemplated by farmers who have late corn that they want to get the full feeding value from.

We know of one progressive farmer who grew a big crop of barley hay on a piece of land he had levelled for alfalfa but that he wanted to "settle" with a season's irrigation before seeding the alfalfa. After taking off the barley crop he sowed milo maize and Egyptian wheat in drills, giving the land a thorough irrigation before preparing the seed bed. It has been irrigated once since, and now much of it is 10 feet high and still green (October 26) and although the grains in the heads are mostly in the "milk" or "dough," some are hard and mature. He will have a big tonnage of feed per acre if he can save it in good shape, and he is now about to buy a good stave silo. With a lot of alfalfa, plenty of hogs and young stock, an orchard started, and a good piece of land and a good water right, this man is in a business that knows very little about panics and hard times.

The day is not far off when every good diversified irrigated farm in the Sacramento Valley will have one or more silos.

Sacramento Valley Farm Essentials

There are a good many things essential to the success of a diversified irrigated farm in the Sacramento Valley. There must be alfalfa and livestock and trees if the highest development and profits are to be secured.

A great many new farms have been started, and more will be in the next few years, and to those who have such we would most earnestly suggest that hay sheds of ample capacity—and silos—are two essential things that will be big factors in the successful working out of the affairs of the place.

Nothing makes such sure and steady revenue on a new irrigated farm as livestock, dairy cows, hogs, sheep, steers and poultry. Feed, good rich succulent feed, every day in the year, is necessary to the most successful conduct of the livestock business. Hundreds of farmers this fall have an abundance of good alfalfa hay in the stack that must be baled and sold, or moved before the winter rains come, or much of it will be spoiled. If they could have had big hay sheds to have put it in direct from the field they would have been saved hundreds of dollars in labor and thousands of dollars worth of hay that will be lost. Every time a forkful of hay is moved unnecessarily it costs money and lessens the profits for the year. An ideal system for handling hay on a small farm is from shock to barn or shed in two operations, and from the shed to the stock in one or two more.

With a supply of hay well sheltered there is an abundance of dry, sweet feed rich in protein. Then a silo full of succulent, slightly sour corn stocks and ears will balance this protein alfalfa with a food rich in carbohydrates. And a silo is essential for the conservation of the greatest amount of food value grown in the corn crop.

Hay sheds and silos—let any new farmer head his list of essentials in the way of improvements and buildings with these.

A New Settler's Dairy Problem

Whenever a farmer moves to a new country he finds new conditions. The climate is generally different and there is frequently a perplexing difference in soil conditions.

In the Sacramento Valley, for instance, there is a great deal of soil that is called "heavy." This means that it is composed largely of silt and clay and that unless the moisture condition is just right it is hard to work into the mellow granular condition of more sandy land. The soil is much richer than if it contained 20 to 30 per cent of sand, but more difficult to work.

When a man who has farmed sandy soil buys a piece of this rich but heavy Sacramento Valley land he often has difficulty in adapting himself to the new conditions and sometimes becomes very much discouraged before he realizes how well off he is. All of the good things are offset and set far in the distance by the difficulty in working the soil.

We know of a case of this kind. A man came from Ohio and bought an irrigated farm in the Sacramento Valley. But he and his wife are delighted with the climate. They have never been so well in their lives; they laugh at people who call the summers hot, because the contrast with Ohio heat is favorable to the Sacramento Valley summer weather; and they like the progressive people who are their neighbors. Not only do the people appreciate the climate, but the long open season, grazing and out of door life, practically every day in the year, is very pleasing to hogs and chickens and cows, and a larger average yield of cream per cow is being made than in Ohio. And because hogs can make growth and pork out of practically all of the feed they consume, instead of using a lot of it to keep up bodily heat against the cold weather, they mature earlier than in the east.

But because the soil is more difficult to handle these good people had become very much discouraged and had almost decided to quit and go back and "start over again" there.

And this is what changed their minds and made them contented and useful citizens of a new community that needs them and many more of their kind. A friend with whom their

Warranted to Give Satisfaction.

Gombault's Caustic Balsam

Has Imitators But No Competitors.

A Safe, Speedy and Positive Cure for Curb, Splint, Sweeny, Capped Hock, Strained Tendons, Founder, Wind Puffs, and all lameness from Spavin, Ringbone and other bony tumors. Cures all skin diseases or Parasites, Thrush, Diphtheria. Removes all Bunches from Horses or Cattle.

As a Human Remedy for Rheumatism, Sprains, Sore Throat, etc., it is invaluable. Every bottle of Caustic Balsam sold is Warranted to give satisfaction. Price $1.50 per bottle. Sold by druggists, or sent by express, charges paid, with full directions for its use. ☞Send for descriptive circulars, testimonials, etc. Address

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Make your new barn a modern barn, even though it is small. It will cost you less and pay you more every day it stands, in labor saved and in more productive cows.

Louden Barn Equipments are the only really economical, sanitary and comfortable barn equipments, and are the greatest labor savers ever invented for the farm. Used all over the world by good business farmers and dairymen—by men who know what pays and why, and who will not pay a cent for mere frills.

USED ALSO IN MOST STATE AND U. S. GOVERMMENT STABLES WHERE ONLY THE BEST IS INSTALLED.

Simple in design, strong in construction, easy to install, outlast the barn, and their cost is so little that you cannot afford to do without them even if you have but few cows.

The Louden Line Consists of:

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- Louden Feed and Litter Carriers,
- Louden Bird-proof Barn Door Hangers,
- Louden Mangers and Manger Partitions,
- Louden Maternity Pens, Bull Pens, Calf and Hog Pens,
- Louden Alignment and Go-right Devices,
- Louden Power Hoists, Hay Tools and many other labor savers and money makers for the barn and farm.

Illustrated catalog free on any of these equipments.

Our barn building experts are at your service. Send for free suggestions and preliminary sketches. Let us save you money and trouble in planning your new barn or remodeling your old one.

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Raise Your Calves Without Milk

Let Blatchford's Calf Meal take the place of milk in raising your calves. Costs less than half as much and the calves are stronger, bigger - boned and healthier.

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has been known as the complete milk substitute since the year 1800. It prevents scouring and contains just the ingredients necessary to promote early maturity. Sold by your dealer or direct from the maker.

Write for Actual Figures

Send your name and address and get actual figures that show the possibilities for making money from your calves.

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BLACK LEG

LOSSES SURELY PREVENTED by Cutter's Blackleg Pills. Low-priced, fresh, reliable; preferred by Western stockmen, because they protect where other vaccines fail. Write for booklet and testimonials.

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Cutter's Blackleg Pill Injector 1.50

Discounts: 250 doses, 10 p. ct.; 500 doses, 20 p. ct. Use any injector, but Cutter's simplest and strongest. Every package dated, unused pills exchangeable for fresh after date on package. Do not use old vaccine (ours or any other), as it affords less protection than fresh. Insist on Cutter's. If unobtainable, order direct. Send check or M. O., we pay charges and ship promptly. THE CUTTER LABORATOPY, Berkeley, California.

problem was discussed asked one simple question: "Admitting all that you say about the land being hard to handle, once that you do get it in alfalfa, how many more cows per 40 acres can you keep than you could in Ohio?"

Our discouraged friend admitted that he could keep two or three times as many and that as he manured the land to make it more open, and as the alfalfa roots kept opening up the soil and subsoil, this carrying capacity would increase, and that by raising a small field of corn each year and putting it in a silo more stock per acre could be carried.

There are some things about every country and every locality that we would change if we could, and we need to "take stock" occasionally to see how well off we are.

Use of Good Sires as an Object Lesson

Volumes could be written about the value of using good sires, but there is no way that it can be impressed on a breeder of common stock so well as to use one. The first litter of pigs, for instance, from a common sow and sired by a registered boar should be enough better in every way than the balance of the herd to establish the use of pure bred sires forever. They should make more rapid gains and they should produce more revenue.

Most ordinary pigs—just common pigs—look pretty good when they are very small, but as soon as they get a little age their noses get long. They grow sharp and narrow over the shoulders. A great shrinking seems to take place back of the shoulders around the heart girth, showing lung room capacity smaller than it should be. They become very long legged and their hams do not fill down as they should to make the most possible meat.

We know of a most striking example that illustrates the point well. During the past year one very good grade sow has produced two litters of pigs. One lot is sired by a common mongrel boar; the other by a registered Berkshire. Of the litter from the mongrel boar no two are alike and only one even approaches the standard for an ordinary good hog. They are long legged, cat hammed, long nosed and slow growers, even with the best of care and feed. On the other hand the litter from the Berkshire boar are as like as peas, longer bodied and lower to the ground than the best of the mongrel litter. They are so evenly filled out from end to end that a straight-edge laid along their sides would touch from shoulder to ham. Their backs are wide from end to end and their ribs so widely sprung that they are literally covered with meat from their ears to their tails. They are making faster gains than the mongrel litter and should be worth at least one cent per pound more on any market.

Hog Prices

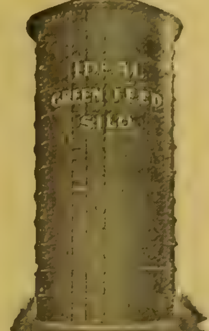
Hog prices have declined from one to two cents per pound during the past three weeks. Stockmen who are in touch with the situation say that there is always a drop when barley fed hogs from the stubble fields come on the market in large numbers. There is a good deal of "feast and famine" to the supply of meat making animals for the Pacific Coast trade.

Pigs that are farrowed on the big ranches in the winter and spring, and some from the preceding year's crop, are grazed through the summer and fattened on barley stubble and sometimes finished on grain. This brings them on the market in September, October and November. Unless a good many hogs are carried on into the winter on grain this run of stubble fed hogs is pretty well over by December. Then from January on to the next September prices should be higher because of a shortage of grain fed, well finished hogs in the country tributary to the California markets.

The aim of the farmer should be to carry over in his granary enough feed to be able to market fat hogs during this "short supply" period.

The little farm flock, well managed, has been the means of converting many farmers to the exclusive sheep-growing and wool-producing industry.

Brood sows should never be allowed to run in the same yards with cattle or horses. Many good sows have been ruined by a kick.



Save That Last Crop of Alfalfa

By Putting It In An

Ideal Green Feed Silo

Alfalfa makes an excellent grade of silage, very palatable and nutritious and carrying a high percentage of protein. By letting this last crop grow to maturity and then putting it into an Ideal Green Feed Silo, you are beating nature at her own game, for it can be siloed in the rain if necessary.

Order Your Ideal Green Feed Silo Now

and get it up ready for this last crop of alfalfa when it matures. You can commence feeding it just as soon as the silo is filled, and by next spring it will be empty and ready to receive the first cutting, that as hay is usually not worth handling, because of the weeds it contains and the trouble experienced in curing it.

Nothing excels silage, especially legume silage, during the dry summer months for keeping up the flow of milk. Next spring's filling will carry you through the best part of the summer, with the silo ready to receive that crop of corn next fall, thus providing a juicy succulent feed all winter which will permit you to reduce the amount of mill feed necesary to buy at least 50 per cent, a saving more than sufficient to pay for the entire outfit.

Order your Ideal Green Feed Silo now and stop buying so much mill feed.

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Everything for the Dairy and Creamery

De Laval Dairy Supply Co.

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Alpha Engines and Smalley Cutters

Get This Valuable Free Book on Stock Feeding

It contains vital information and statistics on scientific feeding, and acquaints you with the high nutritive value and economy of

Cottonseed Meal

which, according to government records, contains a greater percentage of feed units than any other stock feed, and at much lower cost per feed unit. Corn meal or wheat bran costs 6¼c per feed unit, while Cottonseed Meal costs only 3c per feed unit.

Your stock—horses, mules, cows, pigs, sheep, poultry—will thrive better and cost about half as much for feed with Cottonseed Meal. But get the Book and read all about it. Write for it now before you forget.

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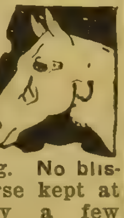

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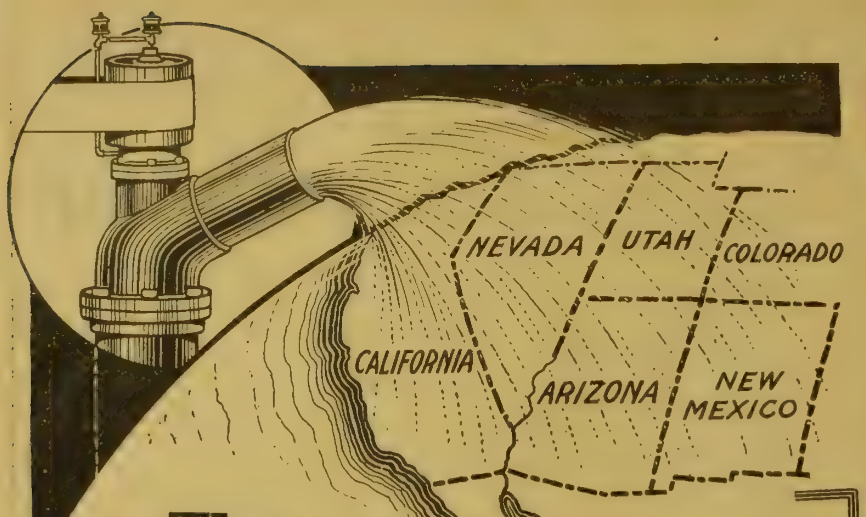

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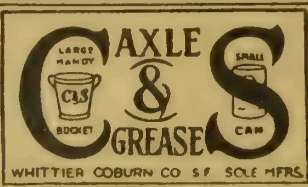
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Veterinary Queries

Answers in this column by Dr. Wm Petrie, 2714 South Harvard Blvd., Los Angeles, are without charge. For immediate mail answer remit $1.00. In writing questions give full symptoms or particulars of injury of animal

Barrenness

Kindly advise me how to treat a case of barrenness? The cow is medium young and in fairly good condition. Her last calf came about May first and she has been coming around regularly since the last week in July. Have taken her to the bull each time.—Subscriber, Raisin.

The fault may be with the bull. Try another one. Also give her the following tonic: ground gentian four ounces, nux vomica two ounces, sulphate of iron two ounces and farina enough to make one pound. Mix and divide into 16 powders. Give one every night.

Harness Galls

Please let me know through your paper the best way to treat shoulder galls and what salve to use?—Subscriber, Merced.

Oxide of zinc ointment is a good remedy for harness galls. You can get it from any druggist. Be sure that the harness fits properly, and when you remove the harness bathe the shoulders with cold water. Also give a handful of epsom salts in the feed once a day for two weeks.

Lumps in Udder

I had a Holstein cow come fresh about four weeks ago but could get no milk from one of the back quarters. I called a veterinarian, and he used an instrument and slitted the teat four ways when we were able to get about three or four quarts of milk but have never been able to milk her without a milking tube. Now we only get about a pint from this teat. She gives about three gallons from the other three quarters. The affected quarter has hard places in it, and when inserting the milk-tube it strikes an obstruction about an inch from the end of the teat and I find it quite difficult to get it any further. Have been using iodine ointment but it seems to get no better. What can I do for her?—Subscriber, Merced.

The lumps in the udder are due to some form of poison that has entered through the opening. All instruments used should be boiled before using. You may be able to stop it by injecting a dram of iodide of potash dissolved in a pint of pure water. This should also be boiled and cooled to animal heat before using. The lump in the teat should be slitted to start its absorption, but the opening in the end should not be cut.

Caked Udder

I have a cow that has been fresh three months, that gives about five gallons of milk per day, but of late she has been failing in one back quarter and now gives only about a quart from it. This quarter also is more solid than the rest of the udder. What is the remedy?—Subscriber, Merced.

The quarter that is getting hard should be bathed with hot water and rubbed with the hands frequently and the milk drawn from it carefully three or four times a day. A large handful of epsom salts in the feed once a day will thin the blood and help very much in relieving the trouble.

Ringworm

Steer calf about four months old has two small bare spots on his face. The hair is gone from these spots and they constantly grow larger. The spots look like scabs and are evidently due to some kind of skin disease. What is the remedy?—Subscriber, Porterville.

It is probably ringworm. The treatment is to scrub the parts clean and when dry apply an ointment made of two drams of iodine crystals, two ounces of tincture of iodine and enough lard to make four ounces. A few applications of the ointment will stop the disease, but to prevent its spread to other animals the stable and fences where the cattle rub should be whitewashed.

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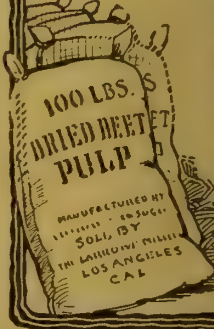

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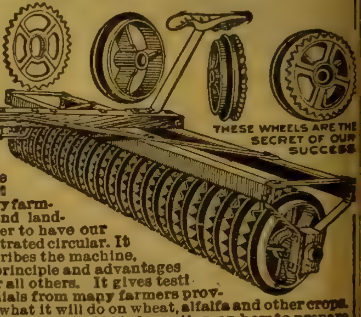
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Poultry for Profit

ROUP,—ITS CAUSE AND CURE

Written for the California Cultivator

By Jean A. Koethen

OF all the diseases which afflict fowls no other is of such economic importance as roup. Chicken pox comes and goes, but usually in this climate leaves the fowl as well as it was before. Other diseases are sporadic and occasional, but roup in some localities devastates the flock year after year, leaving the fowls, if they recover, predisposed to fresh attacks, and houses and yards more or less infected with the germs of the disease. Like the colds which afflict human beings, it comes, no one knows exactly how, only, unlike ordinary colds, it does not run its course and leave. Roup is a cold and more than a cold. There is something malignant about the germ which causes it, and it passes rapidly from bird to bird, picking always the weaker ones till a large part of the flock is affected.

When I am asked the cause of roup I feel myself at a disadvantage. I can answer, "bad air at night, drafts on the head from cracks and knot holes; dampness, exposure, inherent weakness and predisposition to roup, contagion," and all the other reasons usually given, just as glibly as I could once "bound" Ohio or give the capitals of the Atlantic states, but this does not satisfy me. I know that many cases of roup occur when fowls are kept in open front houses and carefully protected from drafts, and when the ground has been dry for months, so there must be something more fundamental than any of these causes, potent as they are.

My own hens never have roup. In three years I have not seen a case. To be sure they sleep in open front houses, but four years ago, when we lived in Los Angeles, my hens were in open front houses, yet they had roup summer and winter. In the valley where we are now I have never heard of a case of roup nor seen any one who had heard of one. It is, in short, a roupless locality.

I shall not give the name of this happy valley, lest I be accused of "boosting." Doubtless there are many similar districts, for I am satisfied that wherever we find similar topographical conditions we shall find the same freedom from roup and similar diseases. It may be of some use, however, at least to those who are looking for a location for a poultry farm, to examine the "lay of the land" which makes for rouplessness.

The chief characteristics of this valley are (1) a uniform southern slope, (2) protection by hills from the chill coast winds, (3) entire absence of any sort of draft, (4) decomposed granite soil. In other words the chief elements in eliminating roup are perfect air and water drainage.

We are familiar enough with the dictum that a poultry house should be built on soil which is well drained, but how often do poultry house builders stop to consider air drainage? Whether it is because of the excessive heat of their bodies or on account of the sensitiveness of their head appendages, the fact is that fowls are extraordinarily sensitive both to drafts and to dampness in the air, and both these conditions are dependent upon air drainage. If the house is lower than the surrounding country, the damp air, which always seeks its lowest level, settles about it. If it is in a hollow or ravine, or even a good-sized arroyo, there will be not only the settling of the damp air about the house at night, but a draft of air drawing through in the daytime, and roup is the consequence.

I don't think proximity to the coast has anything to do with roup, but protection from the sharpness of the coast wind has much to do with it. This protection may be given most effectively by a range of hills to the east or north. When the hill or dune is on the west, and the ground falls away toward the east, I should expect to find more or less roup. On the high ridge in western Los Angeles, where I fought roup for two years, we had perfect drainage, but the adobe soil was against us, for adobe does not carry off filth and poison as do sand and decomposed granite and the coast wind blew across the ridge at a terrific rate. We had also too much shade, for, while shade is very necessary to the welfare of fowls, the sun is even more necessary, and a torrent of cold air drawing through dense shade makes the best combination I know of for producing roup, bronchitis, and rheumatism. Had we cut away all but one of our trees and built some sort of windbreak, either at the top of the ridge or below, in the direction from which the wind came, I think we could easily have prevented all these troubles.

I would not be understood to minimize the effects of bad ventilation as a cause of roup and all kinds of colds. Without doubt proper attention to ventilation, windbreaks and sanitation in general will do much to overcome the effects of an unfortunate location, but I believe there are some localities where it is very difficult, if not actually impossible, to prevent occasional outbreaks of roup, and the prospective poultryman who has it in his power to choose should study the matter carefully.

Symptoms and Forms of Roup

Roup appears in various forms; sometimes it affects the eyes, sometimes the throat; sometimes it appears in abcesses under the eye or about the head; sometimes one eye is swollen and glued shut with a sticky discharge; sometimes the bird is droopy and depressed, refuses to move or eat; sometimes it seems fairly comfortable. But there are two symptoms that in real roup are never absent. These are a discharge from nostrils and eyes, which may be rather thin at first and becomes thick as the disease progresses, and a putrid odor which always accompanies it. A cold which has no offensive odor is not roup. If you go to your chicken house at night, and on putting your head in, notice a sickening odor, you may know you have roup somewhere, even though you have not detected anything unusual about the birds before. This is the one sign that never fails.

In the severer forms of roup the bird always seems very ill, but sometimes there is only a swollen eye or a discharge from the nostril, and the bird does not seem greatly inconvenienced. As long as there is an odor, however, be sure it is roup, and that it is contagious.

The One Cure

Robinson says, "I long ago ceased to doctor roup, because I found that as long as I doctored roup I had more roup," and this is the experience, in greater or less measure, of every experienced poultryman. "Give him the ax" is the prescription of the expert, and hard as it seems, it is the best way. The fowl that has been cured of roup keeps the seeds in its system, and if it does not itself show the disease again will very likely transmit the tendency to its offspring.

For those who feel obliged to doctor there are plenty of cures. The simplest of these is the potassium permanganate treatment, which has been mentioned on this page several times. Kerosene is sometimes effective. Put just a little in a quart cup of water, just enough to make a slight film on the top, and dip the bird's head under, holding it there while you count ten. A little kerosene in the drinking water, or even in the wet mash, is recommended by some.

Dr. Salmon, in "Farmers' Bulletin 530," recommends the following solutions into which the bird's head may be plunged:

Boric acid, 1 ounce; water, 1 quart.

Permanganate of potash, 1 dram; water, 1 quart.

Boric acid, 1¼ ounces; borate of soda, ½ ounce; water, 1 quart.

Peroxide of hydrogen, 1 ounce; water, 3 ounces.

Argyrol is recommended for cases where the inflammation has reached the eye. One or two drops of a 15 per cent solution is introduced between the eyelids twice daily for several days.

If there are abcesses they must be opened with a sharp, clean knife, and the cavity washed with one of the above solutions. A pledget of cotton moistened with the solution may be left in the opening for an hour or two or it may be dusted with iodoform.

From these directions it seems that one really needs to be a trained nurse in order to doctor roup properly, and of course treatment of a whole flock is utterly impossible. Prevention is the easiest way, and the only way that is permanently successful.

SAN MATEO COUNTY SHOW

Mr. Fred West of Burlingame, California, sends premium list and rules covering the third annual Poultry show of the San Mateo County Poultry Association, which will be held in Redwood City November 12-15. W. S. Russell will judge all classes.

EVERYBODY CAN CANDLE EGGS

To enable farmers and housewives to test eggs before a candle and tell accurately their condition before they are opened, the department of agriculture has just published a colored egg-candling chart. To give a true picture of the eggs, 12 impressions were necessary to produce this lithographed chart.

This chart shows the eggs in their natural size as they appear before a candle, and also as they look when open in a glass saucer. The pictures include an absolutely fresh egg, slightly stale eggs, decidedly stale eggs, eggs with yolks sticking to the shell, eggs where the chicken has developed so far that blood has been formed, moldy eggs, addled eggs, and eggs with a green white.

Comparatively few housewives are aware that a green color in the white of eggs is due to the presence of billions and billions of a certain

(Continued on Page 455.)

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Questions and Answers

THE EDITOR AND STAFF

Questions to be answered in this department should be received at this office one week before reply is expected. Write plainly on one side of the paper and sign full name and address. Unsigned communications receive no attention.

Bean Straw—Alfalfa Meal

Please give value of lima bean straw compared with alfalfa meal.—Subscriber, Glendale.

We have written Professor Jaffa of the state university for information as to lima bean straw. From the tables at hand we learn that soy bean straw analyzes 10.1 per cent water, 5.8 per cent ash, 4.6 per cent protein, 40.4 per cent crude fiber, 37.4 per cent nitrogen free extract, 1.7 per cent fat. Alfalfa hay analyzes 8.4 per cent water, 7.4 per cent ash, 14.3 per cent protein, 25 per cent crude fiber, 42.7 per cent nitrogen free extract, 2.2 per cent fat. From this analysis it will be seen that the alfalfa is more than three times as rich in protein as the bean straw.

Pine Needles for Mulch

On my sandy soil will pine needles spread and plowed under act as a fertilizer? Is land on which redwoods have grown better than other soils? —Subscriber, Santa Cruz.

We see no reason why pine needles would not make an excellent mulch for sandy soil. If plowed under good and deep it should certainly benefit the soil and give better water holding capacity. Bear in mind, however, that if a very heavy supply is plowed under an abundance of water would be necessary for the first few months. We doubt not the soil under redwood trees would be very rich because of the leaf mold which has been forming for hundreds and even thousands of years.

Melon Blight

What causes roots and vines of melons, cucumbers and tomatoes planted on sandy soil to decay and die? The roots were covered with knots or warty appearing bunches.—Subscriber, Hanford.

This may be caused by blight, though we rather think it is caused by nematodes, exceedingly small worms which infest the soil and attack the roots until the plants die. In either case the only remedy is to secure clean land another year, giving this particular soil over to culture of other crops which will not be affected.

Onions From Sets

Will onions from ripened sets produce as large and good onions as where grown directly from seed?—Subscriber, Hanford.

Yes.

Value of Pumpkins

What is the feeding value of field pumpkins or squashes as compared with hay, either alfalfa, oat or barley? —Subscriber, Santa Paula.

Field pumpkins analyze 90.9 per cent water, 0.5 per cent ash, 1.3 per cent crude protein, 1.7 per cent fiber, 5.2 per cent nitrogen free extract, 0.4 per cent fat. Alfalfa hay analyzes 11.8 per cent water, 7 per cent ash, 14,9 per cent crude protein, 24.2 per cent fiber, 37.8 per cent nitrogen free extract, 4.3 per cent fat. This is an average of 12 analyses reported in Henry's Feeds and Feeding. The same book gives barley as follows: 15 per cent water, 4.2 per cent ash, 8.8 per cent crude protein, 24.7 per cent fiber, 44.9 per cent nitrogen free extract, 2.4 per cent fat. Oat hay analyzes 15 per cent water, 5.2 per cent ash, 9.3 per cent crude protein, 24.7 per cent crude fiber, 44.9 per cent nitrogen free extract, 2.4 per cent fat.

Three Per Cent Loans

Please give information as to the government making three per cent loans to farmers.—Subscriber, San Jose.

The time may come but it is not here yet. If it does it will probably be through a banking system which will permit the farmers to deal directly through their own local bank.

Book on Celery

Where can I get information regarding celery culture?—Subscriber, Eureka.

We believe there is no book published on this subject. The Cultivator hopes soon to give an article by one who is thoroughly informed on the culture of celery in California.

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We Have Made a Specialty of Placentia Perfection Walnuts on native black root for a number of years, and are offering the finest trees we have ever grown this year. 80 per cent of our stock is eight feet and up. The scions used were taken from trees in our large orchard that have made a very high record for the past five years. Good Ancestry Pays. Nursery at Villa Park. Hugh T. Thomson, Orange, Cal., R. F. D. 1.

Home-Grown Fruit Trees—Largest assortment, including thousands of Royal Apricots, Tuscan and Phillips Cling Peaches, Pears, Apples, Figs, Grapes, etc., etc. Guaranteed true to name, vigorous, healthy and well rooted. Low prices. Send us your list of wants for special quotations. Inspection of Nurseries cordially invited. Orange County Nursery & Land Co., Fullerton, Cal.

For Sale—50,000 Sour Orange seed bed stock, fine quality, or will let to responsible party on percentage basis; also 2000 A1 late Valencias, two years old next spring, or might exchange for Washington navels, H. H. Eshelman, Soldiers' Home, Cal.

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The Walnut Nursery has a fine lot of grafted walnut trees again this season, Chase, Eureka, Mayette and Placentia Perfection. Order now and get the best. W. A. Litten, Prop., R. F. D. No. 2, Whittier, Cal. Home phone 7863.

Walnut Trees—Eureka and El Monte varieties a specialty, also Franquette and Placentia. Write for prices and description of stock. Personal inspection invited. Eureka Walnut Nursery, Montebello, Cal.

The Cheapest and Best Way to get reliable fruit trees is to get whole root grafts; 40 years' experience in Nursery. Write to J. Ept. Wilson, Healdsburg, Cal., R. D. 1, Bx. 1.

The 1200-Acre Nursery, growers of 1500 varieties of trees and plants. OREGON NURSERY CO., Orenco, Oregon. Sales office, 522 Chamber Commerce, Los Angeles, Cal.

Cherry Trees—As fine as ever grown; largely Royal Ann, Bing and Tartarian. A full line of all fruit, nut and shade trees, ornamentals, etc. Write for prices on anything you need in nursery stock. Santa Clara Valley Nurseries, Gilroy, Cal.

Franquette and Mayette grafted on Northern California Black, 3 to 10 feet. Prices right. Special discount on large orders. Sunset Nursery, 525 W. San Carlos St., San Jose, Cal.

Fine Placentia Perfection Walnut Trees, grafted on Native Black. Also late Valencia and Eureka Lemon trees. Prices reasonable. Write for prices. Perry Lewis, Box D, Tustin, Cal.

Fig Trees—2000 Calimyrna (Smyrna) and Caprifig trees for sale. Make offer for one or all. Strong, well grown stock. W. F. Lowe, Roberts P. O., Cal.

For Sale—Florida Sour Orange and Grapefruit Seed, 100 bushels $25.00 per bushel. Cash with order. $25.00 per box. Joe Anderson, Jr., Box 205, Leesburg, Florida.

Snap—1200 Budded Eureka lemon trees, ¾ inch diameter and up; $500 for quick sale. A. C. Wisegarver, San Fernando, Cal.

Walnut Trees, Wilson Wonder, Franquette, budded on Northern Black Walnut root. Prices right; order early. Ekstein Nurseries, Modesto, Cal.

For Sale—Eureka Walnut Trees, budded on Native Black Walnuts. Choice stock. Order immediately. Don't delay. Wm. Holve, Fullerton, Cal.

For Sale—Acacias, Budded Loquats, Evergreens, Feijoas, Palms and all kinds of ornamental trees and plants. Robertson's Nurseries, Fullerton, Cal.

Citrus Nurseries, Murphy Oil Company, East Whittier, California. Selected stock for sale; inspection invited.

You Future Nurserymen—Write for prices on special stocks of plants to start business with. Ballou's Nursery, Pasadena, Cal.

Budded Citrus Trees and seedlings at fair prices. Will take auto or land. Butler's Morning Side Nursery, P. O. Box 45, Lamanda Park, Cal.

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New Zealand Reds—Scored and sold on merit. Investigate. Our Catalogue is free. Caldwell Bros., Los Angeles, Cal., Box 613.

For Sale—New Zealand Reds, fine breeding stock. Also Barred Rock eggs for hatching. Mrs. C. A. Richey, R. D. 8, Box 557, Los Angeles.

TURKEYS

Thoroughbred Mammoth Bronze turkeys; fine early stock. Also flock of 10 finely marked turkey hens from one to five years old and weigh from 16 to 21 lbs. Price $50. Mrs. Nellie Hart, Holtville, Cal.

Thoroughbred Mammoth bronze turkeys. fine early stock. Mrs. Nellie Hart, Holtville, Calif.

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Catalogues for the seed and nursery trade. The live stock and poultry industries are a specialty with us. Two thousand illustrations to select from. Write for prices and samples. The Kruckeberg Press, 227 Franklin St., Los Angeles.

BEES

Beekeeping Pays Big—Price list, bees, instruction books, etc., free. Spencer Apiaries Co., Box 14, Nordhoff, Cal.

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How to Make Money—Mrs. A. Basley's latest Poultry Book is without exception the best ever written. The secret of how to raise every turkey hatched and the "Basley Formulas," now published for the first time, are worth many times the price of the book. The "Western Poultry Book" is a practical book by a practical woman. Price, $1. Order from Cultivator Publishing Co.

Poultry Wanted—We pay the highest market price for all the local poultry we can get, no matter how large the quantity; also fresh ranch eggs. We remit immediately. National Poultry Co., successors to Allaway & Layton Co., 607 E. Third St., Los Angeles, Cal.

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Buff Orpingtons—Best strain; money back if not pleased; bred for size and laying. Trios, $7.50; Cockerels, $5 and $3.50; hens and pullets, $1.50. W. D. Wasson, Mountain View, Cal.

Barred Rock Cockerels—(Hawkins Royal Blue Strain) ready for mating, also Barred Rock, R. I. Red, Buff and White Orpington day-old chicks every week. Enoch Crews, Santa Cruz, Cal.

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Bullfrogs—Investigate the possibilities of breeding the BIG Eastern Bullfrog. Unusual opportunity. AQUALIFE, 12, SEYMOUR, CONN.

Blue Andalusian Cockerels, grand large birds, ready for the breeding yards, or exhibition. Price $3.50 and $5.00. J. R. Huddleston, 342 Edgeware Road, Los Angeles, Cal.

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Barred P. Rocks—Pullet bred high class cockerels of 1, 2, 3, at Riverside Fair. $5 and up; sisters of cockerels, winners J. H. Kallmeyer, Compton, Cal.

Barred Plymouth Rocks—Winners at New York, Kansas and California shows. Eggs and choice stock for sale. C. H. Vodden, Los Gatos, Cal.

Wanted—White Leghorn pullets in small and big lots. Pay good price. H. Madlener, R. F. D. 2, Orange, Cal.

For Sale—A few W. Rock cockerels. Fine birds. 6th and Florida Ave., Sawtelle, Cal. M. A. Huddleston.

Barred Rocks Only. Some fine cockerels for sale at $3.00 each. G. L. Hawley, Madera, Cal.

FARM LANDS FOR SALE

VICTORIA, AUSTRALIA, WANTS SETTLERS

Special inducements; government land railways, two schools; cheap irrigation 31 years to pay for farms adapted to alfalfa, corn, grains, fruit, etc.; climate like California, ample markets. reduced passages; special excursion being arranged Free particulars from F. T. A. FRICKE Government Representative from Victoria, 687 Market St., San Francisco, Cal. Box X.

For Sale—80-acre relinquishment; fine level, rich soil—all under cultivation—well fenced. Good well, fine climate and market. $800 takes it. $400 cash, balance 2 years, 8 per cent. Or will sell 80 acres patented land, unimproved, same place, at $20 per acre, ½ cash, balance 4 years, 8 per cent. This land is in San Luis Obispo County. Plenty rainfall. Wm. T. Mantz, Watta, Cal.

160 Acres—8 miles from good R. R. town; good house, barn, etc.; fine oak timber, partly cleared; plenty of water; fine climate; $2,000. Also several claims of government land relinquishments, etc. W. Wallace Baldy, Raymond, Madera Co., Cal.

Apple Orchards—Large and small, in the only apple producing section in California. The greatest section west of Missouri River. Write for booklet. Geo. W Sill & Co., Watsonville, Cal.

Alfalfa and deciduous fruit land of my own. Several sized tracts. $35 to $475 per acre. Address Box 297, Corona, Cal.

WANTED

Wanted—Responsible party to take charge of business in each county. New Automatic Combination Tool, combined wire fence stretcher, post puller, lifting jack, etc. Lifts or pulls 3 tons, weighs 24 pounds. Sells to farmers, shops, teamsters, etc. Descriptive catalogue and terms upon request. Harrah Manufacturing Co., Box M, Bloomfield, Ind.

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The Martin Shock Absorber Co. desires to secure the services of live, wide-awake local representatives. Good business proposition offered to the right man. Address Martin Shock Absorber Co., Cor. Pico and Grand Ave., Los Angeles.

Wanted—Tenant for 160 acres of irrigated land 1½ miles north of Niland, Imperial Valley. Virgin soil, splendid location, all under ditch. Will divide if necessary. Mrs. W. M. Thomas, 1936 No. Wilton Place, Los Angeles, Cal.

Wanted—Position by single man as working foreman for orange or lemon grove. Expert in budding and pruning. 22 years experience. References furnished. Address, Box W, Cultivator Office, Los Angeles, Cal.

Wanted—To hear from owner of good farm for sale. Send cash price and description. D. F. Bush, Minneapolis, Minn.

MISCELLANEOUS

Free for Six Months—My special offer to introduce my magazine "INVESTING FOR PROFIT." It is worth $10 a copy to anyone who has been getting poorer while the rich, richer. It demonstrates the REAL earning power of money, and shows how anyone, no matter how poor, CAN acquire riches. INVESTING FOR PROFIT is the only progressive financial journal published. It shows how $100 grows to $2200. Write NOW and I'll send it six months free. H. L. Barber, 420, 28 W. Jackson Blvd., Chicago.

Responsible Mail Order Man would like to get in touch with rancher who has nuts, fruits, etc. Can sell your products by mail at large profits. Producers-to-Consumers Supply Co., Room 306, 230½ So. Spring St., Los Angeles, Cal.

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I have 1500 No. 1 Troutman which I will close out at the ridiculous price of 10 cents each, and a few slightly used ones at 7½ cents. Why pay more for those giving no better service? W. H. Fowler, Ontario, Cal.

Employers—You want workers. Give us an opportunity to supply your need of competent help. We insist on efficiency and will send you the man or woman you want. We make no charges. Free Municipal Employment Bureau, Los Angeles, Cal.

For Rent—A packing house suitable for oranges or lemons, has an ideal situation in the heart of Valencia and Lemon groves in the frostless belt, on the Tustin Branch of S. P. R. R. For particulars write to Goddicksen & Flippen, Orange, Cal.

"Smith's Pay the Freight"—To reduce the high cost of living, send for our Wholesale to Consumer Catalogue. Smith's Cash Store, 112 Clay St., San Francisco.

State, Indian and government land. Write for booklet. The California State Land Information Bureau, Sacramento.

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Gas engines, centrifugal and deep well pumps, motors, and everything pertaining to irrigation, for sale and exchange. If you want a complete plant or any part write us; we are experts in irrigation; advice and estimates cheerfully given. Will buy, sell or exchange. Reliable and responsible, everything guaranteed as represented. Machinery & Motor Exchange, Inc., 733-735 San Fernando St., Los Angeles. Main 6382, F-3433.

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Distillate and Oil Engines, pumping machinery of every description, spraying outfits, pulleys, belting, etc. We also have some used engines and pumps which have been put in first-class condition, which we can sell at a great reduction. Come and see us. William Gregory, 602 North Main St., Los Angeles.

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Holt Steam Tractor, 80 boiler, 60 engine; cost $4000; our price $850. Boiler engine absolutely first class, just passed inspection. Part cash, balance payments. Auto, what? Demmitt Co., 120 N. Main St., Los Angeles, Cal.

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Sour, Sweet and Grapefruit Seed, Bed Stock, extra fine plants from 10 in. to 2 ft. 4 in. high; heavy stock and the best plants on the market. Place your order now and get the choice. Gus Shelburne, 727 Brent Ave., So. Pasadena, Cal.

Strawberry Plants — Gold Dollar, Clark Seedlings, Magoons, Wm. Belt, Marshalls, Goodells, Early Ozark, and new Oregons, $2.50 per thousand. Thoroughbred plants. Mr. John Christiansen, R. F. D. 2, Canby, Oregon.

SPINELESS CACTUS

The very best Burbank spineless Cactus at reduced price. By mail, postpaid, 20c each. By the hundred, 15c. J. H. Young, Box 113, R. R. No. 1, Anaheim, Cal.

For Sale—A limited amount of White Tepary beans 15c lb., 100 lb. lots at a reduction. Dr. Geo. P. Clements, Buena Vista Rancho, Riverside, Riverside Co. Cal.

Berry Plants, Rhubarb, Cacti—It will be worth your while to send me a postal right now if you are interested. Louis C. Scribner, R. 2, Pasadena, Cal.

Strawberry Plants — Magoon, Marshall, New Oregon, Hood River or Clark's Seedling, Klondykes, etc., $2.50 per 1000. Fine plants, well packed. J. W. Vinacke, Canby, Oregon.

Cal. Black Walnut Seed—The true Northern Strain. Write for prices naming quantity required. Santa Clara Valley Nurseries, Gilroy, Cal.

Thornless Cactus Slabs for sale at 5 to 10 cents each. Chas. R. Hanna, R. D No 3, Riverside, Cal.

SCHOOLS AND COLLEGES

Wanted—Sixty young men and women to enter the Western Normal on Monday, Jan. 4th, to take the place of those who will graduate in December. An adequate training for teaching in the shortest possible time and at the least possible expense. Write for journals. Address Western Normal, 635 E. Main St., Stockton, Cal.

PHOTO SUPPLIES

Developing, 10c per roll; Printing, 2½x4¼, 3c; 3¼x5½, 4c; Post Cards, 4c Denver Store 706 So. Hill St., L. A.

LIVE STOCK

Ohio Improved Chester White—(O. I. C.); entire herd immunized against hog cholera. Nothing but immunized stock sent out. Few spring boars left. Few June gilts. One August litter will be ready to ship the middle of October. October farrows will be ready December first. Make reservations now for first choice. All stock first class in every respect. C. B. Cunningham, Mills, Sacramento County, California.

Grape Wild Farm Thoroughbreds—Guernsey Bulls of A. R. Breeding. BERKSHIRE HOGS. Finest herd in the state. All ages for sale. A. B. Humphrey, proprietor. Mayhews, Sacramento Co., California.

For Sale—Herd of 8 registered Ayrshires, 4 cows, 3 heifers, 1 bull — excellent breeding. Santa Maria Ranch Company, Watsonville, Cal.

Duroc-Jersey Boars—Four months old; registered. Fine individuals. Silver-Spangled Hamburg roosters. Prices reasonable. Tribble Nurseries, Elk Grove, Cal.

Thoroughbred Berkshire Boars of all ages from developed and large-boned hogs. Riccomi Bros., Mountain View, Cal.

Thoroughbred Doroc Jerseys for sale. Address Box 543, Lomita Rancho, San Jacinto, Cal.

Glenview Poland China—Stock for sale. Chas. R. Hanna, R. F. D. No. 3, Riverside, Cal.

For Sale—Young registered Berkshire boars and sows, fine strong stock. Stanislaus Ranch Co., Crows Landing, Cal.

M. H. Locke Co., Lockeford, Cal.—Choice young Jersey bulls for sale.

DUCKS

Ducks—High class Mammoth Imperial Pekin Ducks, and Indian Runners for breeders. Also eggs. The best stock in California. Stone Canyon Poultry Farm, P. O. Box 348, Sawtelle, Cal. Sunset Phone 565-M, Santa Monica Exchange.

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OLIVES
WORKED ON
PICHOLINE ROOT

have a stronger growing and deeper feeding root system than those grown from cuttings. Mission Olives worked on Picholine Root are more thrifty, grow larger, and are more heavily productive—that means more profit.

The foundation of your trees is THE important feature. In addition to working our Olives on Picholine seedling, we cut our wood from a fine strain of trees having a good record for productiveness and size of fruit.

In buying trees, you want the best—the first cost is no consideration. We have a limited number of Olives on Picholine. Write us now and reserve the trees you want.

The Silva-Bergtholdt Company

Fruit Tree Specialists

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YOU CAN'T BUY POOR TREES FROM US.

200,000 FEET CHEAP WATER PIPE

Just received several carloads of new and 2nd hand water pipe, Oil Well and Water Casing. In ½, ¾, 1, 1¼, 1½, 2, 3 inch and many other sizes. O. D. Casing 2, 3, 3½, 4 in. Riveted and surface irrigation pipe. Big Stock. Prompt shipments. Lowest price. Write, phone or wire.

ADAMS PIPE WORKS
2030 Bay St., Los Angeles
Phones Bdwy. 1264 — F1917
(Under entirely new mngmt.)

WEBER AND COLUMBUS WAGONS

STEEL SKEIN
CAST SKEIN
STEEL AXLE
ONE HORSE
ALL SIZES

AGENTS WANTED

ARNOTT & COMPANY, Los Angeles, Cal.
Write for Catalog 112-118 S. Los Angeles St.

When writing advertisers, mention the Cultivator.

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The food taken by the nursing mother influences the physical development of the child. Children should be fed on nothing but the most strengthening foods.

Ghirardelli's Ground Chocolate is both a food and a drink.

Children need no coaxing to take it. They like it and thrive on it. It is the final expression of purity, wholesomeness and deliciousness.

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PERFECTION OIL HEATER

keeps the entire household cozy and comfortable. Burns nine hours without refilling. Easily cared for.

Dealers everywhere.

Write for booklet, "Warmth in Cold Corners."

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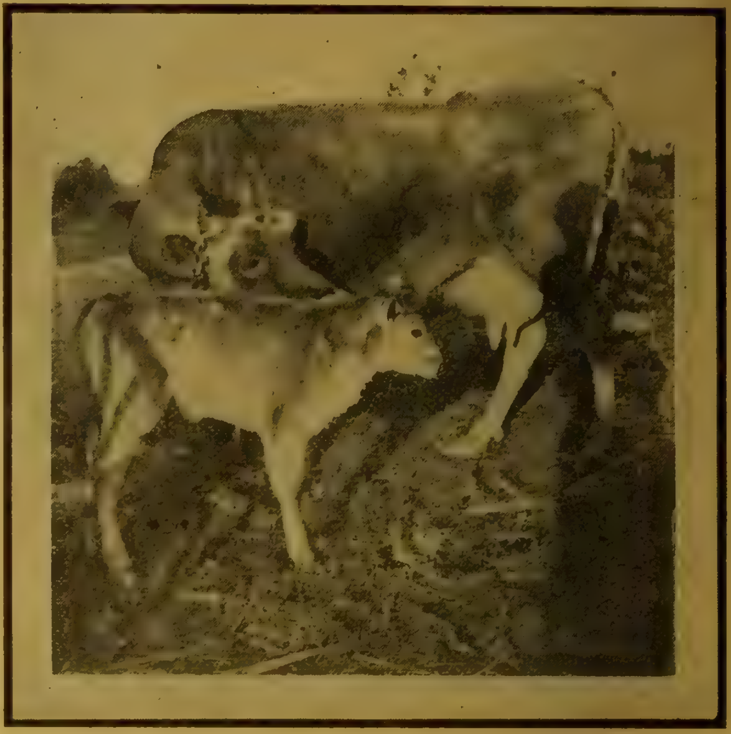
For Best Results Use Pearl Oil

November Prize Photo Contest

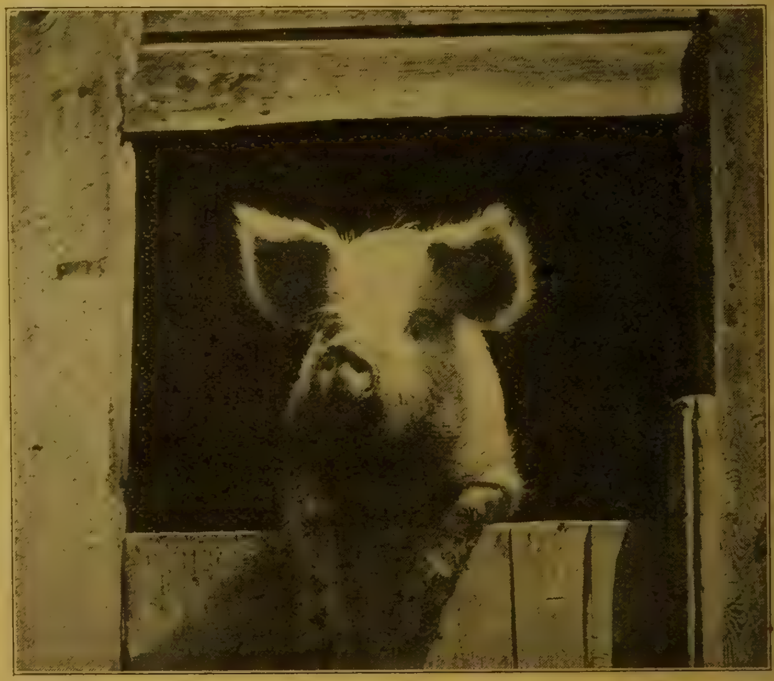
THE present attitude of the swine industry in California is shown very plainly in "The Face in the Window," one of the prize winners for November. There seems to be nothing retiring in the position taken by Mr. Hog. If the feed isn't coming he wants to know why.

The other prize winner is typical of the dairy industry of the state. It's being mothered. It is growing under the mothering, and well it may, fo it is the source of much of our prosperity.

Speaking of hogs and cows and hog pictures reminds us of a bunch of photographs which appeared in the August issue of Camera Craft of San Francisco, an excellent magazine, by the way, which will have interest for everyone making photographs of farm scenes. The August issue has an article on photographing cows and chickens, and in the article are a large number of photos with text touching upon methods of securing them, which should prove a splendid help to the amateur photographer. To give an idea of their common-sense way of treating the subject, we quote:



SOLICITUDE
First Prize Photo by Mrs. Minnie Carner, Orange



THE FACE IN THE WINDOW
Second Prize Photo by J. M. Reen

"I shall never forget the first picture of a chicken that I made. A fellow had won a prize with one of his birds at the local poultry show; and, proud as Lucifer, he wanted a portriat of it. At that time I knew as much about a chicken as a pig does about its grandfather, but I didn't let Mr. Poultryman know it. I told him I would be around in the afternoon and make the picture. Then I sat myself down in the old rocking chair and thought it over. A chicken! For the life of me, I could not see how I was going to get a picture of a chicken that would look right to an expert chicken fancier. To start with, the darned things were never quiet; how on earth was I ever going to get a picture of a hen when it would not keep its head still? But here, they do keep their heads still—sure they do; they move in jerks,—a quick movement, then a momentary pause to get their bearings, and then another jerk. There was nothing to it; I would snap the shutter as the hen jerked its head and catch it during the pause. That was the first real step towards success. I told the man frankly that he would have to pose his bird and that I would get the picture when he told me the position was correct. That being satisfactory, I went ahead and made the picture; and, strange to say, it was all right.

"Photographing dairy cattle is one of the most difficult propositions that confronts the man who has the temerity to boast of his ability to photograph animals. These, perhaps the most useful as well as the most valuable of all domestic mammals, demand careful attention at the hands of the photographer, as he can, through lack of care, so mar the appearance in the finished result as to make the cow or bull appear positively deformed. It can readily be seen that a man is ill advised who attempts to photograph dairy animals without some knowledge of the subject.

"There are some fundamental requirements that apply to pictures of all animals that should be made of first consideration in attacking the subject of cattle portraiture. The animal must stand on all four feet, the head must be erect, the back level, the carriage graceful, the eye clear and bright, the ears pointed forward and the tail must set at a proper angle to the body. In addition, each of the several breeds have characteristics of their own that must receive the careful attention of the photographer."

An article in the September issue of the same magazine, "Photography by the Naturalist"—and every farmer should be in that class—has some beautiful reproductions of butterflies and even scale insects and aphis doing their work of destruction on live plants.

Get the copy of Camera Craft above referred to and do some fine work for the next contest.

Next Month's Prize Offers

Photos for the first issue in December should reach the Cultivator office not later than November 24. The next day is Thanksgiving, and we take it that some Thanksgiving photo will be a prize winner for the first issue in January.

The prizes will be two dollars for the first prize-winner, $1.00 for the second, and then for all photos which are accepted and retained, a six months' subscription to the California Cultivator will be given. We will only keep photos from which we can make clean-cut engravings. This means that everyone who sends a photograph which will answer for an engraving will receive a prize. Photos for the December contest should be in this office by Tuesday, November 24.

If you or some member of your household is now receiving the Cultivator, send in that name with your photo so that if you receive a six months' subscription it may be given as an extension of the existing subscription. That will probably be more satisfactory to you than to receive an additional copy for the coming six months.

THE NEXT PRIZE CONTEST

For the best short article on "A Safe and Sane Christmas" $2.00 cash; for the second best, $1.00; for all that are published, six months' subscription to the California Cultivator.

Read the prize offer on Page 379 of the Cultivator of October 15.

All articles for contest should be addressed to California Cultivator, Los Angeles, and should be in this office by Thursday, November 12. They will appear in the issue of November 19.

With your article send suggestions for subjects of future contests. Also when you write send name of member of your family to whom you wish the subscription to go—you might be one of those who will receive a subscription, and if your paper now comes in husband's or brother's name, let us know so that subscription will be extended six months instead of an extra copy going each week to you for the coming six months.

Photo Contest

The next photo contest will close Tuesday, November 24, and prize winners will appear in the first issue of December. What do you think of this month's prize winners on this page? Next month the offer will be the same. Try your luck this time.

IDEAS FOR THE COOK

Written for the California Cultivator
By Isabel Cottle

Breakfast

Corn Meal Mush, Cream
Salt Pork in Batter   Fried Apples
Muffins   Coffee

Lunch or Supper

Cream of Celery Soup
Browned Riced Potatoes
Broiled Chipped Beef
Tomato Salad
Creamy Rice Pudding
Tea or Milk

Dinner

Creamed Fish with Potatoes
Ecalloped Turnips and Carrots
Spinach Salad, Mayonnaise
Scotch Scones   Grape Marmalade
Pumpkin Pie   Coffee

Scotch Scones

Sift one pint of flour twice with a teaspoon each of salt and sugar, also three teaspoons of baking powder. (If made with sour milk use one-half teaspoon of soda and one of baking powder.) Rub into the flour three tablespoons of butter, also add yolk of an egg. Moisten with milk, roll lightly until round in shape, cut into quarters, brush over with milk and bake quickly.

Creamed Fish With Potato

Melt two tablespoons of butter, blend in three tablespoons of flour, mixed with one-half teaspoon of salt, dash of pepper, pour in slowly one and one-half cups milk, stir and cook until smooth and add one and one-half cups of finely flaked cooked fish. Beat the white of an egg until stiff, stir it into one cup of well seasoned mashed poptato and beat with a fork until very light. Butter ramekins, half fill with the creamed fish, spread roughly with the potato, sprinkle with grated cheese and bake in hot oven until brown.

WAR

Photo by Mrs. J. H. Brohaska, Chula Vista

PEACE

Photo by W. D. Watkins, San Jose

Creamy Rice Pudding

To one-third cup of well washed rice add a scant cup of sugar, a scant teaspoon of vanilla, a little salt and two quarts of rich milk. Bake for two and one-half hours in a slow oven, stirring two or three times during the first hour. Serve very cold with cream.

Tomato Salad

Heat two cups canned or fresh tomatoes with two cloves, one-fourth bay leaf, one teaspoon salt, one teaspoon sugar, and one-half teaspoon paprika. Soak one tablespoon gelatine in one-fourth cup cold water for ten minutes; add to hot tomato mixture and stir until gelatine is melted; strain and set in cold place until nearly jellied, then add one cup cucumber cubes, and more salt and lemon juice if desired. Turn into small molds and set away to become firm. Serve with mayonnaise.

People who borrow imaginary troubles may have the real kind to lend.

Successful agriculture means selling without waste.

The Challenge in Firestone Quality

EXTRA rubber and extra fabric, built layer by layer into a tremendous strain resisting unit—this means more mileage.

Better facilities, better workmen, closer inspection—in short, the Firestone Quality—more mileage.

Firestone

Non-Skid Tires assure you also the economy in cost which goes with immense volume of the world's finest tires, prepared in America's Largest Exclusive Tire Factory. Extraordinary service at ordinary price.

Send for the Free Books and Tube Bag

Tell us the name of your tire dealer and make of your tires and receive free our books and a waterproof bag for your Inner Tubes.

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NEW Threads and Couplings
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Screw Casing
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Guaranteed for Pressure

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WRITE FOR IT TODAY—

September, October, November

are three of the best months we have for PLANTING

Rhubarb and Cactus If planted now you should derive good results by spring

J. B. WAGNER-Pasadena, Cal.

The Rhubarb-Berry & Cactus Specialist.

RHUBARB GROWING BERRIES—SMALL FRUIT CACTUS J. B. Wagner Pasadena

RETAIL **ALFALFA SEED** WHOLESALE

New crop ready for delivery now

Samples, prices, etc., on application. We guarantee everything we sell

V. A. Peterson Alfalfa Seed Co.

Arbuckle, Cal.

We are the only exclusive Alfalfa Seed Dealers in the West

San Francisco-Los Angeles Produce Markets

Los Angeles Market

LOS ANGELES, Nov. 4, 1914.

BUTTER

There has been no change in prices of upper grades of butter, though country and ladles have dropped one cent.

Prices to trade 4 cents above following quotations:

Creamery Extras	30
Firsts	27@28
Country	23
Ladle	22

EGGS AND POULTRY

Prices to trade, 3 cents higher than following quotations:

Fresh ranch, case counts	40
Candled	43@44
Northern Case Count	**51**
Petaluma-Santa Rosa	**52**

Prices to producers:

Hens, lb.	14@19
Roosters, old	9
Broilers, lb.	22
Fryers	17
Roasters, lb.	15
Turkeys	17@20
Ducks	16
Geese	14
Squabs, doz.	2.00

LIVE STOCK

The following quotations are f. o. b. Los Angeles on all stock:

Hogs, 175 to 200 lbs., per cwt.	8.00
Prime Steers	7¼@7½
Heifers	6¼@6½
Calves, lb.	8½@9
Sheep—	
Ewes, head	4.50
Wethers	4.50@5.00
Lambs, head	4.50@4.75

POTATOES

Wholesale selling price:

Idaho	1.20@1.25
Sweets, lug	50@60
Northern Burbanks, cwt.	1.20@1.30
Salinas	1.90@2.00
Shimas	1.30@1.40
Lompocs	1.80@1.90

ONIONS

Wholesale selling price:

Australian Brown, cwt.	80@90
Silverskins, cwt.	1.85@2.00
White Globes	1.85@2.00
Yellow Danvers	80@90
Garlic	16@17

VEGETABLES

Wholesale selling price:

Artichokes, Northern, doz.	50@90
Beets, doz.	30@35
Beans, String	5@6
Lima	4@5
Cabbage	60@65
Carrots, doz.	30@35
Cauliflower, doz.	40@45
Celery, crate	1.75@2.35
Corn, Sugar, box	60@65
Cucumbers, lug	50@60
Pickling, lug	1.25@1.50
Egg Plant	3½@4
Escarole, doz.	40
Horseradish, lb.	15@16
Leeks, doz.	35@40
Lettuce, crate	85@1.00
Mint, doz.	35@40
Okra, lb.	6@7
Onions, Green, doz. bunches	15@20
Oyster Plant	30@35
Parsnips, doz.	25@30
Peas, lb.	4½@5½
Peppers—	
Bell, lb.	3@4
Chili, lb.	2@3
Pumpkins, lb.	1½@2
Radish, doz.	20@30
Rhubarb, box	80@85
Spinach, doz.	20
Squash—	
Summer, lug	30@35
Crookneck	30@40
Hubbard, lb.	1½@2
Turnips	30@35
Tomatoes, lug	40@50

FRESH FRUIT

Wholesale selling price:

Apples—	
Banana Apples	1.10@1.25
Bellflowers	70@90
Jonathans	1.25@1.35
Spitzenbergs	1.20@1.25
Rome Beauties	1.45@1.60
King Davids	1.25@1.35
Crabapples	1.00@1.10
Bananas	3½@4
Berries—	
Strawberries, basket	4@6
Blackberries, basket	5@6
Cantaloupes—	
Locals, standard	1.25@1.50
Jumbos	2.50@3.00
Casabas, doz.	1.25@1.50
Cranberries, bbl.	7.35@8.50
Figs, box	1.10@1.25
Grapes—	
Black Moroccos	1.10@1.25
Cornichon	1.10@1.25
Malagas, crate	1.00@1.20
Muscatels, lug	1.10@1.25
Tokays, lug	1.35@1.50
Guavas, basket	3@4
Peaches, lug	1.25@1.50
Pears, Bartlett, lb.	7@8
Seckel, lug	1.30
Winter Nelis, packed	2.25
Flemish Beauty, packed	1.85
Persimmons, lb.	3@7
Pineapples, lb.	6@6½
Pomegranates, box	1.25@1.50
Watermelons, lb.	1½@2

CITRUS FRUIT

Wholesale selling price:

Lemons	2.50@3.50
Grapefriut, Seedless	2.50
Valencias	1.75@2.75
Limes, basket	1.00@1.25

DRIED FRUITS

Wholesale prices to retailers are:

Evaporated Apples, Fancy., lb. boxes	6½@12½
Apricots	9@11
Nectarines	12½
Peaches	6@6¾
Pears	8@12
Prunes	5¾@17
Plums	10

HAY

Buying prices f. o. b. cars Los Angeles:

Barley	10.00@11.00
Wheat Hay	10.00@11.00
Tame Oat	11.00@13.00
Alfalfa	9.00@11.00

GRAIN

Wholesale selling prices f. o. b. Los Angeles:

Corn, Yellow	2.20
Corn, White	2.30
Wheat	2.15
Oats, Red	1.85
Oats, White	1.65
Kaffir Corn	1.90
Millet	3.75
Popcorn	4.75@5.00
Egyptian Corn	2.05
Barley Seed	1.45
Milo Maize	2.00
Cal. Seed Oats	2.25
Sunflower Seed	5.25@5.35

FEED STUFF

Wholesale selling prices f. o. b. Los Angeles:

Bran, Heavy	1.55
Alfalfa Meal	1.05
Alfalfa Syrup, per cwt.	1.05
Beef Scraps	3.00@3.10
Beet Pulp	1.25
Cracked Corn, cwt.	2.25
Cracked Wheat, cwt.	2.30
Cotton Seed Meal	1.85
Bloodmeal	3.60@3.70
Bone Meal	2.00
Meat Meal	3.00
Sun Flower Seed	6.00@6.10
Bone Green	1.95@2.05
Charcoal	1.90@2.00
Oil Cake Meal	2.05
Fish Meal	3.15@3.25
Rolled Oats	1.90
Rolled Barley	1.35
Middlings	1.85
Feed Meal	2.30
Oat and Wheat Middlings	1.60

San Francisco Market

SAN FRANCISCO, Nov. 3, 1914.

BUTTER

There has been a slight decline on butter prices.

Prices to trade, 4 cents above following quotations:

Extras	30
Prime Firsts	27
Firsts	26
Seconds	24

EGGS AND POULTRY

Pullet eggs have dropped 3½ points since last week. Other grades have declined slightly.

Prices to trade 3 cents higher than following quotations:

Extras	51
Select Pullets	41½
Storage Extras	28

LIVE STOCK

San Francisco prices, gross weight:

Steers	4@7
Cows and Heifers	3@6¼
Calves, lb., live weight	6@9½
Hogs	6½@8
Wethers	5@5¼
Ewes	4½@5
Milk Lambs	6½@6¾

VEGETABLES

Wholesale selling price:

Beans—	
Wax	2½@3½
Strings	2½@3½
Limas, lb.	3½@4½
Brussels Sprouts, lb.	2@3
Cabbage, cwt.	1.00@1.25
Carrots, sack	35@50
Celery, doz.	20@25
Corn, Green, sack	90@1.75
Cucumbers, lug	40@60
Egg Plant, lug	25@60
Peppers—	
Bell, lug	35@40
Chili, lug	40@50
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Tomatoes, lug	40@75

FRESH FRUIT

Wholesale selling price:

Apples—	
Bellflowers	40@65
Spitzenbergs	50@90
Jonathan	40@75
White Winter Permains	50@65
Crabapples	25@50
Newtown Pippins	50@90
Bananas, Hawaiian, bunch	1.25@2.0
Cantaloupes, crate	1.00@1.25
Nutmegs, lug	20@50
Cranberries, bbl.	7.00@8.25
Figs—	
Black	50@7
Grapes—Crates	
Black	40@6
Cornichon	50@6
Tokay	40@5
Seedless	75@1.0
Malagas	75@1.0
Muscats, lug	80@1.1
Huckleberries	6@
Nectarines, crate	75@1.0
Peaches, box	30@5
Pears—	
Bartletts, wrapped	1.25@2.0
Bartletts, lugs	50@7
Winter Nelis, wrapped, box	1.25@1.5
Other varieties	35@7
Pomegranates, box	50@1.0
Pineapples	2.50@3.2
Persimmons	75@1.0
Prunes, crate	60@1.0
Quinces, box	30@5
Raspberries, chest	6.00@8.0
Strawberries, chest	5.00@8.0
Watermelons, doz.	75@1.5

DRIED FRUITS

Wholesale prices are:

Prunes—1914 crop, bulk basis, 30-40s 6½c@6¾c; 40-50s, 6@6¼c; 50-60s, 5½@5¾c; 60-70s, 5½@5¾c; 70-80s, 5¼@5½c; 80-90s, 5¼@5½c; 90-100s, 5¼@5½c. 1913 crop worth practically sam prices. The above are for Santa Clar Prunes, outside sections about ¼c.

Other Fruits 50-lb. boxes—	Standard.	Ch.	Extra Ch.	Fcy
Evaporated Apples		5¾c	6 c	7
Apricots	6½c	7½c	8 c	8¾
Peaches	3½c	4 c	4¼c	5
Pears	7 c	8 c	9 c	10

NUTS

ALMONDS—Prices fixed by Almon Growers' Exchange to the trade, f. o b. California:

Nonpareil	2
I X L	2
Ne Plus Ultra	1
Drakes	1

Wholesale selling price:

Peanuts—	
Unpolished	5@
Polished	6@6
Japanese, Shelled	6¼@6
Italian Chestnuts	6½@

BEANS

Wholesale selling price:

Limas	5.15@5.2
Lady Washington	3.60@3.7
Pink	3.25@3.5
Black Eyes	3.75@4.0
Cranberry	3.80@4.0
Small White	4.30@4.5
Garbanzos	5.50@6.0
Large White	4.00@4.1
Bayou	4.00@4.2
Manchurian Speckled Bayous	3.50@3.7
Manchurian Butters	3.90@4.1
Manchurian Cranberry	4.00@4.2
Bayous, California	3.50@3.7
Red Mexican	5.00@5.2
Red Kidney	4.25@4.5
Horse Beans	3.00@4.0
Bayou, Mexican	4.00@4.2

HONEY

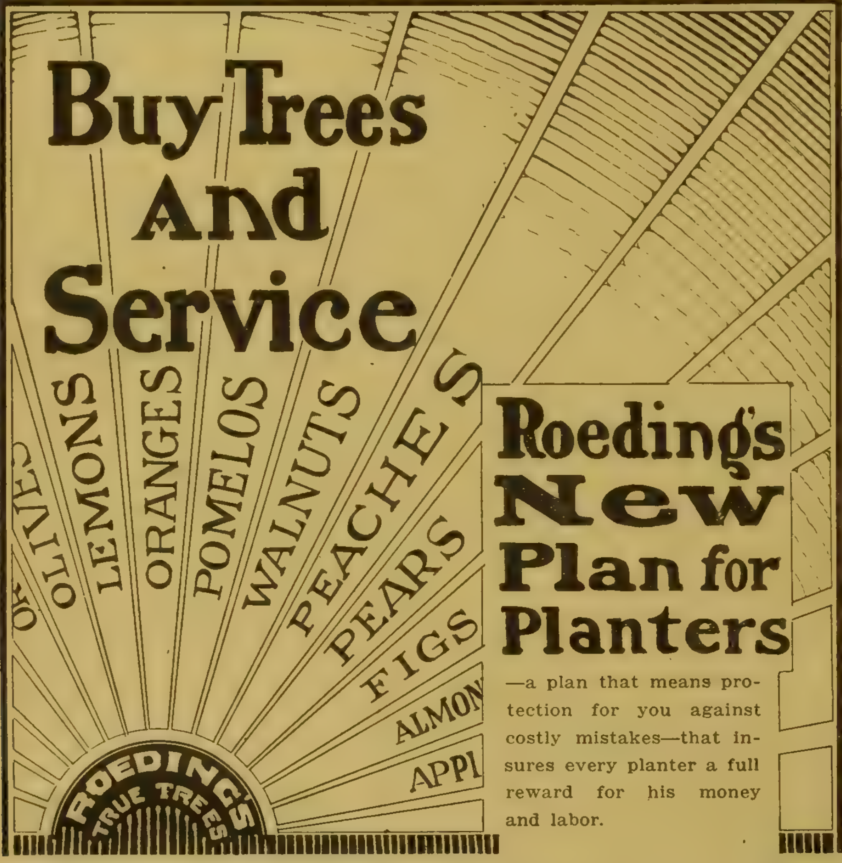
Comb, Water White	14@1
Amber	10@1
Dark	7@1
Extracted White	7@
Light Amber	6½
Dark	4@5½
Beeswax	27@3

HOPS

1914

Sacramento Valley	8@1
Sonoma-Mendocino	9½@1
Oregon Clusters	9½@1

Buy Trees And Service



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WE can't begin to state in this small space the extent and value of the service which we are offering to planters FREE. No matter how small or how large a number of trees or vines you anticipate planting, you should get in touch with us at once. Tell us what you think of planting; state your soil and other conditions—and we will gladly send you full details about our new plan. Remember, it is free and costs you nothing. Write us today for details.

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1607 E. Washington St., Los Angeles, Cal.

10 Packages Seeds for 25c

Send 25c and I will send you these seeds, one regular sized package of each: Acme Tomato, Ponderosa Tomato, Early Spring Cabbage, Premium Late Flat Dutch Cabbage, Davis Perfect Cucumber, Hoodoo Muskmelon, Big Boston Lettuce, French Breakfast Radish, Mixed Zinnia, Mixed Poppy.

SEEDS & TREES THAT GROW IN YOUR STATE

Apple 7c, Peach 7c, Plum 16c, Cherry 17c each, in regular California varieties. I pay freight on $10 tree orders. Large assortment of Fruit and Forest Trees, Grape Vines, Berries and Shrubs; all kinds of Garden, Flower and Farm Seeds. Large illustrated Garden Book free.

German Nurseries & Seed House (Carl Sonderegger)
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WALNUT TREES

Steady, staple Crops, and Profitable Returns.

MAYETTE — TRUE WILTZ STRAIN. For productiveness, FREEDOM FROM BLIGHT AND SUNBURN, and QUALITY OF NUT, the Wiltz Strain of Mayette has no equal in ANY of the other standard sorts. Late Bloomer.

FRANQUETTE — TRUE VROOMAN STRAIN. Late Bloomer. Second only to the Wiltz Mayette Walnut for Northern and Central California.

Our scions of Wiltz Mayette and Franquette are cut by R. Wiltz, pioneer walnut grower, and are not only absolutely true as to strain, but are cut from finest, selected parent trees.

When planting a Walnut, get THE BEST. Write us today.

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You Can't Buy Poor Trees From Us

Buy your
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5 to $50 weekly as Chauffeur or Repairman.
udents assisted to positions. Best system, lowest price.
ODELS FURNISHED. Write for Free Book.
ractical Auto School, 66P Beaver Street, New York

HAY

We quote the average wholesale prices on carload lots on today's market as follows:

Fancy Wheat Hay, lt. bales	12.00@13.00
No. 1 Wheat or Wheat and Oat	8.00@10.00
No. 2 Wheat or Wheat and Oat	6.00@7.50
Choice Tame Oat	10.00@11.00
Other Tame Oat	6.00@9.00
Barley	5.00@7.50
Wild Oat	5.00@7.00
Alfalfa	6.00@9.00
Stock Hay	4.50@5.00
Straw	30@45

GRAIN

Wheat, Cal. Club	1.87½@1.90
Corn, Eastern Yellow, blk.	1.75@1.76¼
Corn, Egyptian White	142½@1.45
Barley, Feed	1.15@1.17½
Oats, White	1.55@1.60
Oats, Red, Feed	1.35@1.50
Millet	3@3¼
Flax	5@5¼
Rye	1.50@1.60
Sunflower	5@5½

FEED STUFF

Alfalfa Meal, car lots	12.50@13.50
Bran, ton	25.00@26.00
Feed Cornmeal, ton	40.00@41.00
Cracked Corn	40.00@41.00
Rolled Barley, ton	24.00@25.00
Rolled Oats, ton	37.00@37.50
Middlings	31.00@32.00
Shorts	26.00@27.00
Oilcake Meal	32.00@33.50
Cocoanut Oilcake Meal	23.00@24.00

Citrus Fruit Market

LOS ANGELES, Nov. 4, 1914.

The year ended with fairly good record. At no time were there large prices; at no time were there disastrous conditions. The total record for the state did not reach the 50,000 carloads predicted by many, but came wonderfully near that figure. To handle such an immense crop in the face of large productions of many other fresh fruits and financial stringency has called for great skill on the part of the marketing agencies. We believe there is reason for congratulation. The new year starts with a few Valencias yet to go. They are commanding fair prices, but the immense quantities of apples being sold to the consumer at exceedingly small prices are affecting the clean-up of last year's crop, also of the new Navels and the new oranges from Florida. The present prediction is that next year's output of oranges will be less than last year's by 1500 Navels and 100 Valencias. Big sizes, which are now promised, may possibly change these figures somewhat.

Lemons will be about double last year's output.

Shipments

Total shipments of oranges from all California for the year ending Oct. 31 were 45,306, of lemons 3032, of all citrus fruits 48,338.

Shipments of oranges from Southern California for the year ending October 31, 39,024 cars, lemons 2954, total 41,978. For the year ending October 31, 1913, oranges 13,574 cars, lemons 2192, total 15,706. For the year ending October 31, 1912, oranges 30,327 cars lemons 5961, total 36,288. From Tulare County, this year, oranges 5878, lemons 73, total 5951. Last year, oranges 1855, lemons 111, total 1966. From Butte County, this year, oranges 404 cars, lemons 5, total 409.

NEW YORK, Nov. 2.—Twenty-three cars Valencias, one car lemons sold. Market steady on Valencias, strong on lemons. Partly cloudy.

VALENCIAS—	Avg.
Gold Elephant, Eleph. Orchard	$3.00
Gray Elephant, Eleph. Orchard	2.85

BOSTON, Nov. 2.—Eight cars oranges, one car lemons sold. Cool, cloudy. Market is doing better on oranges, easier on lemons.

PHILADELPHIA, Nov. 2.—Eight cars sold. Cool. Ten cars Florida oranges sold. Market declining. Florida oranges, $1.65 to $2.65; grapefruit, 85 cents to $2.20; average $1.45.

CINCINNATI, Nov. 2.—Cool. Market steady. One car oranges, two cars Florida grapefruit sold. Florida oranges sold from $1.25 to $2.25; grapefruit, 65 cents to $2.15.

PITTSBURGH, Nov. 2.—Two cars oranges, one car lemons sold. Cool.

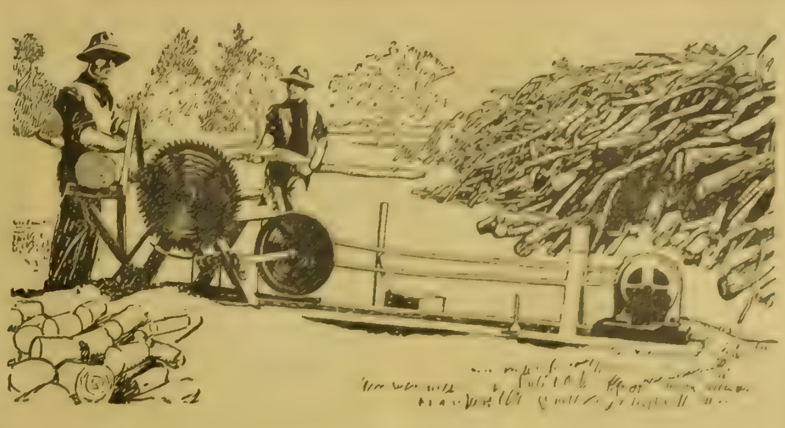
ST. LOUIS, Nov. 2.—Clear and cool. Market strong on small sizes oranges; strong on lemons. Three cars Valencias, one car lemons sold.

EVERYBODY CAN CANDLE EGGS

(Continued from Page 449)

species of bacteria that make a green coloring matter. Eggs with this greenish tint, even though the yolks seem to be perfect, are not fit for food.

As long as the department's supply lasts, these charts will be furnished free upon application to Editor and Chief, Division of Publications. Commercial shippers of eggs, however, should apply for Departmental Bulletin 51, a technical paper on testing by scientific methods not available to the average farmer. This bulletin includes the colored illustrations. The chart alone will be found to be not merely of great service to the housewife wishing to test the eggs she is to serve to her own family, but also of commercial value to farmers, country merchants, or egg shippers who wish to buy and handle eggs on an accurate quality basis.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A Real Economy

Here is a 5-horsepower G-E motor mounted on a sled. The equipment is in daily use on the ranch of E. A. Smith, Napa, Cal.

In the photograph the outfit is shown sawing wood, but sawing wood is only one of its many duties. The sled is moved around from place to place, wherever power is required, to grind feed, cut ensilage or to pump water—saving its owner money, because of the great amount of work performed at small power cost.

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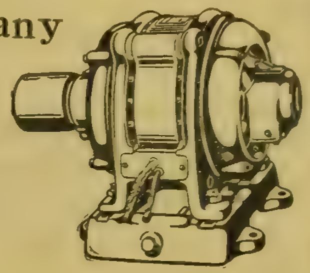
G-E ELECTRIC MOTORS For RANCH AND FARM

Convenience, economy and ability to get through hard jobs quickly and well have made G-E motors the favorites.

G-E Electric motors are the simplest of mechanisms—strongly made—no small parts to get out of order. Reliability of operation is assured the owner of a G-E motor. It is made to deliver power every hour in the day, and every day in the year if necessary—it can be switched off and on a mile away.

If you are not using it now you'll soon decide to use electric power on your ranch—but before you decide send for our free illustrated booklets about Ranching by Electricity.

General Electric Company

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8, 10 and 12 oz. Duck
10x15 to 24x70 Feet

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1¾ inches to 13 inches

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Are You Interested In Poultry?

If so, we have something interesting to tell you. We have just closed a contract with two of the largest dealers in Petaluma for 500 tons of PEERLESS FISH MEAL, to be shipped them between now and May 1st, 1915. Why? Because it is the greatest Egg producer for the money in the world.

PEERLESS FISH MEAL is made from the dark meat of the tuna taken daily from the canneries; it is immediately cooked, the oil removed, and steam dried. This process makes it the sweetest, purest, and best meat food available, and we absolutely guarantee it not to flavor either the meat or the eggs.

Write for Sample and Quotations to Dept. C

Peerless Poultry Supply Co., 409 E. 3rd St., Los Angeles
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When writing advertisers, mention The Cultivator.

The Bull Tractor $495.00

(*F. O. B. Pacific Coast Points*)

What the Bull Tractor Is

A three-wheeled machine; two in a hard smooth furrow, and one on the stubble.

One of the furrow wheels guides the machine when plowing, relieving the engineer of that responsibility.

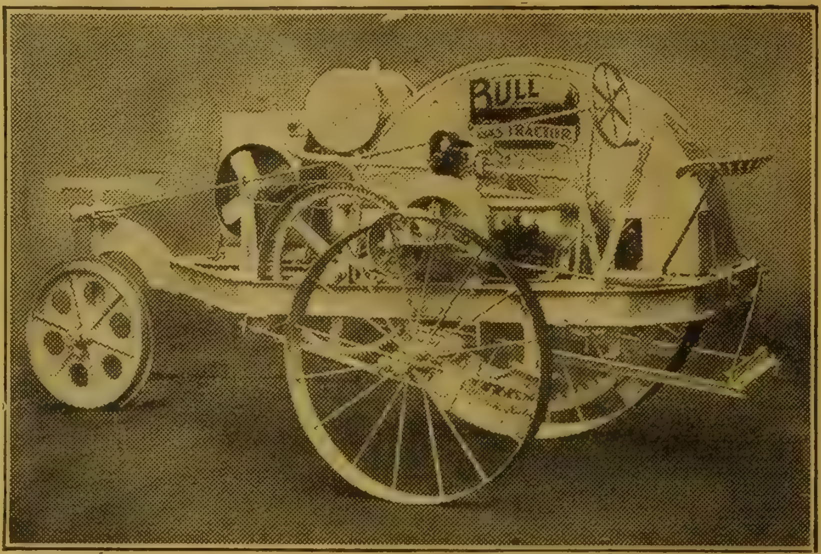
Has a leveling device by which operator can readily level tractor when on side hills.

Has but five working gears. One of these is a roller pinion.

Has but one drive wheel, thus eliminating equalizing gears.

Has but one main drive gear, which will last during the life of the tractor.

The motor is two-cylinder, four-cycle, water cooled type, and no better motor on the market today.



What the Bull Tractor Does

Delivers 12 h. p. at the belt, 5 h. p. at the drawbar, and is designed to do the daily work of 4 or 5 ordinary horses when properly operated under favorable conditions.

Travels somewhat faster than horses, and continuously.

Never gets tired.

Costs nothing for harnesses.

Costs one-half as much for gasoline as for horse feed, and does not eat when it does not work. Gets your work done in time. It is no longer a question of expense only in doing your farm work, but it is a question of getting it done.

Pulls Plows, Seeders, Harvesters, Mowers, Drills, Discs, and then grinds feed, saws wood, or does any stationary belt work on the farm.

Call or write and arrange for demonstration to see this wonderful tractor in actual service.
Full information and particulars cheerfully given. Good territory open for live agents. Write or wire Dept C.

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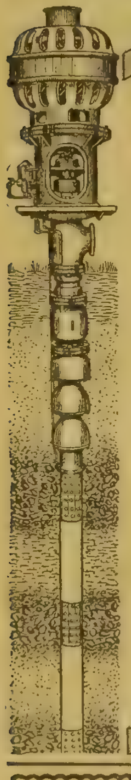

The Waters Deep Under The Earth

are yours at the touch of a switch if you have a Byron Jackson Installation—take the pump pictured here for instance—Latest Improved Deep Well Vertical Turbine Pump with direct connected vertical motor—a combination that guarantees continuous efficient service; requires comparatively no attention and no priming at all—develops slow wells, increases well capacity—costs less to install than any other type of deep well pump.

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Light Running Stag Sulky and Gang

No other plow is so simple, so rigid, or has such great strength in proportion to weight.

There is not an unnecessary piece of material used in the **Stag Plow**—examine the picture.

There are no fancy fixings—nothing that adds extra joints, journals or movable parts to get loose, give trouble and wear out.

From the farmer's standpoint the **Stag** is the

Most Plow for the Money

The **Stag** can be used with or without a pole. Horses control the plow just as well without a pole, because the two furrow-wheels are connected by a rod and then a rod extends to the clevis.

Width of furrow-cut can be changed instantly by the landing lever, which is within easy reach of the operator from the seat.

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Highest award at every World's Fair or Exposition since 1840

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proved by actual experience, are produced by NITRATE OF SODA; because Nitrate is always needed in our soils.

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17 NOV 1914

CALIFORNIA CULTIVATOR

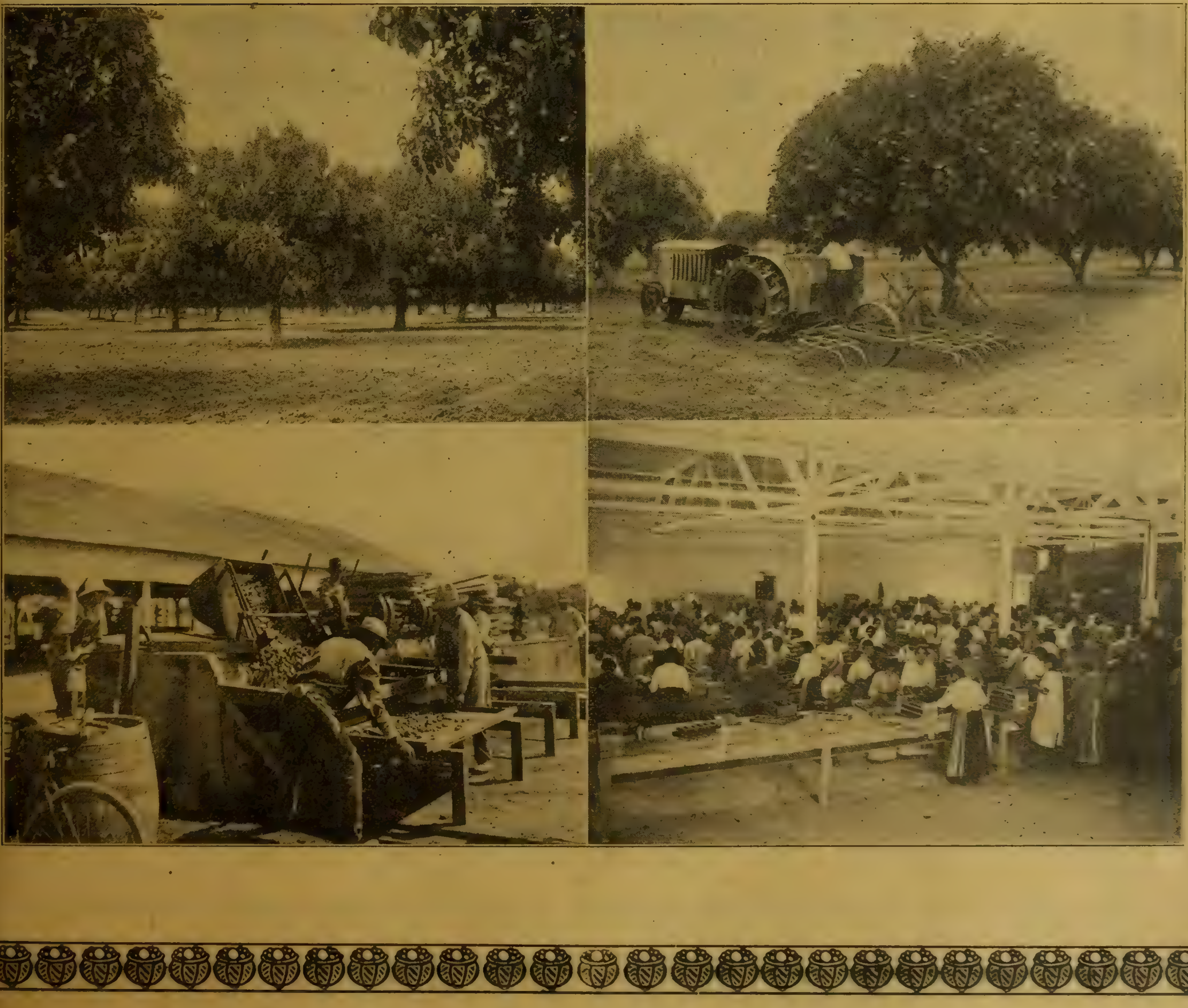
Rural Californian combined with California Cultivator

An Illustrated Weekly Magazine, Devoted to the Rural Home and Ranch

LOS ANGELES November 12, 1914 SAN FRANCISCO

Fig Industry in California Rapidly Becoming of Greatest Importance

Upper Left, Old Orchard of Adriatics; Upper Right, Orchard Tractor in Calimyrna Fig Orchard of Henry Markarian, at Fresno. Lower Left, Fig Washing Machine, Roeding Place, Fresno; Lower Right, Fig Packing Scene in Roeding Fig Company's House, Fresno



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Every alert business man knows that the **WAR IN EUROPE** will cause a great demand on American farmers, to help supply the shortage of food products. **EVERY MAN** who is interested in farming should take advantage of this situation.

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Every man intends some day to own a piece of country land. Now is the time to get it and turn wheat, rice, beans, corn and other immediate crops into money, and plant trees for a permanent future.

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and the income from it is sufficient for a good living and a permanent saving. It can be cultivated by one team and a set of implements and irrigated from a single well. We offer good land—San Joaquin Loam—in the Sacramento Valley, near the eastern foothills in the **TRUE THERMAL BELT**.

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A MODERN PUMPING PLANT, completely equipped and installed: Water when you **NEED IT**.

TREES—A selection of almond, apricots, peaches, prunes, figs. Olive, lemon, orange and walnut trees for planting along roadways.

SEED—A selection of corn, beans, milo, alfalfa, rice and grain.

FARM IMPLEMENTS—A plow, a harrow and a cultivator.

THIS COMPLETELY EQUIPPED FARM places every buyer in a position to begin immediately and assures success from the start. Farming is the **GREATEST AMERICAN INDUSTRY** and today sceientific farming offers supreme business opportunities.

REMEMBER THAT NOW—November and December—are the months to prepare the land for a full crop next year. We advise in planting, and supply seed and trees best suited to the land.

Send this paper to any friend whom you think may be interested in such an opportunity. We will send a three months' subscription to The California Cultivator, without charge, to any one in the East who is interested in owning a California farm.

Write for further particulars of this inviting opportunity to establish yourself on a profitable and fully equipped farm.

Dudley Moulton

Formerly Agricultural Expert, United States Department of Agriculture, and Deputy State Commissioner of Horticulture of California.

12th Floor First National Bank Building, San Francisco, Cal.

Excursion to the Property Every Friday and Saturday

California Cultivator

Rural Californian combined with California Cultivator

Vol. XLIII No. 20 LOS ANGELES: THURSDAY, NOVEMBER 12, 1914 One Dollar Yearly

The Fresno Fig Industry

Dr. J. Eliot Coit Visits Fresno and Writes for Cultivator Readers Regarding the Handling of the Fruit, Methods of Cultivation, Best Varieties and Many Other Most Interesting Points Regarding the Industry. See Photos on Cover Page

DURING the early part of September the writer spent some time in the vicinity of Fresno studying the methods now used in harvesting and packing figs. The most noticeable thing this year is the air of cheerfulness which pervades the place. This is accounted for by the fact that the two great desiderata, a bumper crop and high prices, coincide this year. Everywhere, whether in orchard form or in rows bounding the vineyards, the trees are loaded. Fig trees are rarely propped, but this year thousands of props are in evidence and many of the splendid border trees have been badly broken by the weight of fruit.

The Calimyrna crop is of splendid quality but not extra large. This is due to the scarcity of caprifigs which was quite general over the state this year. Last spring the caprifigs failed for the first time in California, and this was due to the very unusual weather conditions which caused the mamme crop to mature far ahead of time. This warm spell was followed by cool cloudy weather which retarded the appearance of the profichi crop until most of the insects which had issued from the mamme crop had perished. As a result only a small part of the profichi crop contained insects. If the new Abyssinian caprifig had been more generally planted throughout the region this unfortunate situation would probably not have occurred.

Calimyrna figs in the fresh condition are in strong demand in the markets of the bay cities. They are carefully cut by hand from the trees when fully ripe and packed in shallow boxes, one layer deep with a strip of stiff paper between each two rows. Some shippers place under the figs a thin layer of wood wool of fine soft quality. The Mission figs are less tender than Smyrnas and are packed two layers deep with the stems nested. The shipping season for fresh Smyrna figs is from the middle of August till the latter part of October. It is possible that by the use of the Abyssinian caprifig, the first or breba crop of Smyrnas, now always lost on account of lack of insects, may be caprified and extra large fresh figs matured as early as the first of July at which time they should bring a fancy price.

While fresh figs may be grown throughout the southern part of the United States, the dried fig industry requires a hot dry climate and an entire absence of rain during the ripening season. If rain falls on the ripe figs they ferment and are a total loss. For this reason California is the only state in the Union which can produce dried figs. To be sure figs grow and produce well in Arizona and northern Sonora, but there a large green beetle known as the "fig-eater" (Alhorina mutabilis) ruins practically all the figs as fast as they ripen during the four or five weeks when the insect is in the perfect stage. This insect has never entered California but if it should be introduced into the great valleys it is saddening to think what would happen to the fig and peach business there. The insect spends its larval stage as a large white grub in the soil around old alfalfa stacks and cattle pens.

The dried fig business owes its existence also to the fact that the neck of the ripening fig remains firmly attached to the tree until the fig is tough enough to strike the ground without smashing. The tenacity with which a ripening fig holds on to the tree, no matter how limp the neck, is remarkable. This is the reason that fresh figs must be cut rather than pulled.

Contrary to the general impression, a few of the breba or first crop Calimyrna figs although not caprificated will persist and grow to sufficient size to be worth picking up dried for sale. They have a very different appearance from the caprificated figs and are of course much inferior as the seeds are mere empty shells. Most of the breba crop falls while quite small and worthless and the reason for the persistence of a few has not been explained.

Dried figs are picked up from under the trees once a week but Calimyrnas should be gathered every third day toward the end of the season when the danger of showers is greater. It is poor policy to shake the trees before the middle of September as the green figs may be injured.

Some growers dry the figs by spreadind them out on trays in the sun for a few days. Others stack the trays with air spaces between and thus dry the figs in the shade. Formerly the figs were washed in hot water to remove adhering sand but now cold water to which has been added five per cent of salt and one-fourth of one per cent baking soda is being used. The objection to the hot water was that it dissolved too much of the sugar. After washing the figs are again dried and sorted. All sour and bird-pecked figs are culled out and sold for manufacturing purposes.

All varieties of figs are not sulphured. The Mission, being black, probably could not be improved in color by any amount of sulphuring. The Smyrna fig is such a beautiful golden color naturally that it needs no sulphuring, but the Adriatic is usually subjected to the fumes of sulphur for the purpose of lightening the color, softening the skin and disinfecting the fruit from the germs of decay.

After the figs are packed down in the sweat-boxes they go through a process of equalization. They really do not actually "sweat" but the overmoist figs give up a part of their moisture to those which become too dry and hard before being picked up. While in the sweat-boxes the figs are hauled to the packing houses where they are later run through a sizing machine and afterwards dipped in boiling water to kill any insect eggs which may have been laid upon them, soften the skins for packing, and increase the weight from six to ten per cent.

Packing is done mostly by women who split each fig for the purpose of making the cheeks spread better and in order to detect and discard any figs which may have the black smutty fungus in the center. Part of the finest grade of Smyrna figs are not split but are "pulled" between the fingers until the meat which is located largely in the stem end is forced down under the eye. This pulling also softens the skin and improves the appearance.

Inasmuch as the packing of figs does not require a very expensive equipment some of the smaller growers are packing their own figs in five pound boxes, one pound cartons, and eight ounce bricks. Some have been very successful as they not only get the increase in weight on account of the dipping but a better price is secured. The parcel post is proving a great boon to these small growers who were before under a handicap in marketing their fruit. It would seem that the logical outcome would be a cooperative association with a common packing house. By affiilating with some of the larger fruit exchanges the marketing problem would be less acute.

There has been a good deal of complaint about figs in cartons becoming infested with worms and flour mites before they are sold. As the figs are sterilized just before packing it is only necessary to protect them from the egg laying of the dried fruit moth. Great care should be used in wrapping the wax paper about the bricks of figs. If the slightest crack is left the insects are apt to get in.

In regard to varieties there is much difference of opinion. The Mission is no longer being planted for drying. The discussion is between the Smyrna and Adriatic. The packers with some exceptions lean strongly to the Adriatic but those growers who have had experience with the Smyrna are much pleased with it and much new acreage is being put out. The Smyrna bears earlier and is highly resistant to nematodes and sunburn and sells for a higher price. On the other hand it has to be caprified and the tonnage is less than with the Adriatic. It appears that Smyrnas do better in orchard form than as border plantings, and the introduction of the Abyssinian caprifig may increase the tonnage. All things considered it appears that the Adriatic is most profitable when planted as a border and on land where the water table is never less than five feet from the surface during the ripening season. Where a grower plants in orchard form and especially if he intends to pack his own fruit the Smyrna is surely the most desirable.

On account of the present disorganized condition of ocean transportation the usual annual importation into the United States of approximately $1,000,000 worth of Smyrna figs from Turkey is somewhat problematical. In the event that Turkey goes to war this country may be forced to get along with the California figs. This would be a good opportunity for California growers to push their goods in the eastern states. They should make good use of this opportunity, if it comes, by limiting their eastern shipments to those brands which are sure to create a steady demand for more.

45th State Fruit Growers Convention

Representative Gathering from All Parts of California and Many Parts of the East

J. H. Hale, the peach king of Connecticut, Georgia and some other states; Eugene Grubb, the potato king of Colorado, California and some parts of Europe, and fruit growing kings of all kinds from all over California are making the old Normal auditorium in Los Angeles the fruit growers' Mecca this week. Many have come to teach, more to learn—all to learn in fact. But the cordial greetings in hotel lobby and on the street go to show that the social side is even more keenly enjoyed than the practical.

It's a practical convention, however. Men and women are asking to know. Men are planning large for the fruit industry.

Will there be a great association of fruit growers which will be used to make an even greater fruit-growing state? Will legislation be decided upon which will give greater recognition and encouragement to the industry? "Our reputation is world-wide; let us make it wider," is the prevailing thought. Incidentally, "How can we secure more profit?" Many questions will be decided before these words are read.

The exhibit is one of the most educational features. Los Angeles and San Francisco merchants are competing for popular approval of all kinds of orchard appliances, tools and implements. The exhibits are attracting much attention, but those outside the building are suffering a bit of competition in the weather. Dr. Carpenter, the weather man, was given one of the first places on the program, and this should have appeased Jupiter, but it surely had the reverse effect.

The committee has labored for nearly six months in sunny California days for the success of this convention, only to hear the patter of the season's first rain on the opening morning.

We're enjoying the rain, but the crowds are not crowded.

COVER CROPS

Fenugreek
Melilotus
Burr
Clover
Vetches

produce humus and nitrogen in the soil — the two big essentials in groves and orchards. From our studies of the needs of the citrus belt this year, we are strongly recommending the following:
FENUGREEK: is a rank and rapid grower, producing successfully on poor soils.
MELILOTUS INDICA and **BURR CLOVER** are also adapted to heavy and poor soils as they produce a deep and heavy root system resulting in the breaking up and in the porosity of the soil.
VETCHES: We are headquarters for imported and Oregon vetch.
We cannot too strongly advocate the inoculation of seed for best results. Hundreds of our patrons testify that the use of

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300%
Crops

has increased their crops from 200 to 300%, thus giving more humus for the soil and more nitrogen -- gathered from the air by the nitrogen gathering bacteria and deposited in the soil through the nodules they form. The cost—less than $2.00 per acre. For booklet on *Farmogerm*, advice on Cover Crops and Prices, write to Dept. C

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San Francisco Los Angeles

Citrus and Tropical Fruits

SOIL HYGIENE

Extracts from address by Dr. G. E. Bailey before 45th State Fruit Growers' Convention:

OUR soils, the one permanent asset of our nation, should no longer be considered as mere dirt under our feet, but as something to be studied, admired and cared for with intelligence, respect and love. If this were the case we would hear very little about "wornout" soils and "unfertile" soils, and there would be no need of calling attention to soil hygiene.

Soil hygiene is the system of principles or rules for the preservation of the physical condition of the soil, in order that the roots may find a congenial, sanitary home, and always be in a vigorous condition of health. It is not possible for the soil to do its part, for seeds to sprout, for trees to root well, and for crops to grow vigorously and yield abundantly, unless all the physical conditions are right.

A chemical analysis showing that the necessary plant food is present is not enough. That is only one of the conditions which must be balanced with a number of other conditions.

Water

Plants get thirsty. In fact, they are all hard drinkers. From 60 to 90 per cent of the weight of a plant is formed from water, and from 200 to 500 pounds of water are transpired for each pound of dry plant produced. A six-foot high sunflower will evaporate a quart of water in one warm day. A walnut tree will breathe out 5000 gallons of water in a month. It is not enough that a reservoir of water has been stored in the soil. The physical condition of the soil must also be right. There must be capillary action. The pores of the soil must be open. A soil will not make a home for vigorous root growth when its pores are clogged and its drainage system checked, and you cannot remedy this condition by chemical analysis or by dosing it with the most powerful or expensive chemicals. The stored waters must be able to rise and move freely in every direction to maintain the film water. The tiny feeding roots must be able to go in every direction in their search for the films of water that cling to the soil particles.

Too much water and the shutting off of the air is as fatal to plants as it is to animals. Too much water makes the soil cold and wet when it should be warm and moist. Do not scald the roots by poor methods of surface irrigation. Do not plant crops between the trees too close to the trees or one or the other will be robbed of its share of the life giving waters.

Air

Soils must breathe. It is just as necessary that air should penetrate the soil and circulate through it as that it should circulate through the rooms of our homes and penetrate our lungs. There must be air-spaces in the soil. It must be porous so that the soil atmosphere may not only circulate around the roots but be replaced from time to time. The carbon dioxide of the soil atmosphere absorbed in the soil solution is the principal solvent of the mineral plant food. If the access of air into the soil is prevented by compactness, water logging, swamp conditions, slime or sewage, then the plant wastes away and dies. The work of the bacteria is checked even to the extent of denitrification taking place. Deep cultivation of the soil does what Virgil advised,—it "Distends the crevices, and makes new breathings, when new nourishment she takes."

Food

Fruits are humble, plain, every-day livers. While hundreds of minerals are known to science only a few are demanded as plant food. Water, nitrogen, potash and phosphorous are the coffee, meat, potatoes and bread of the plant world. A little mysteriously concocted, high priced, ammoniated, double super-phosphated fertilizer may serve as a tabasco sauuce for some of the high livers among the fruits, but the stock supply of the staples found in every soil is sufficient for nearly every plant, tree or flower.

A good shaking up of the soil, more air and good water will often do more to improve the digestion of the plants than anything else. Fertilizers are not to be abandoned—by no means. They will and should be used more and more, only let us know what we use them for. Let us try and realize that their use is more often to improve the physical condition of the soil than to add food.

Bacteria

The soil teems with myriads of organisms and hums with the activities of many forms of miscroscopic life, with good, bad and indifferent bacteria. They are so small that 1500 could rest together comfortably on the head of a pin. They are so big, so important in agriculture, that huge volumes have been written about them.

Cultivate the soil deep and stimulate into activity the bacterial life that lies dormant in every soil.

Promote especially the activity of the nitrogen producing bacteria. There are about 75,000,000 pounds of inert atmospheric nitrogen piled up above avery acre of land. Why not open the soil and let some of it sink down a few feet and let the bacteria do the rest. But how can they fix the nitrogen of the air if the air cannot penetrate the soil? Why confine nitrification to the furrow slice? The deeper the cultivation the deeper the bacterial activity.

Feeding Zone

The feeding zone of the soil must be deep rather than broad. Crops are

Olive Trees

Olives worked on Picholine Root have stronger growing and deeper feeding root systems than those grown from cuttings.
Our Olives are worked on Picholine Seedlings, the wood being cut from trees having a record for productiveness and size of fruit.
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Incorporated 1913

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Practically anybody can grow a citrus tree, but it takes years of experience to produce a tree that will prove a money-maker when it comes into bearing. Nice-appearing nursery trees are desirable and promising, but do not always prove to be good bearing trees in the long run. Plant for profit and not for appearance only. Our trees are straight, thrifty, well rooted and have strong, full heads, but the main consideration is that: Our buds are carefully selected from heavy fruiting trees and will prove true-to-name revenue producers.

OUR TWENTY-FOUR YEARS

of experience in the growing and handling of citrus nursery trees gives the buyer the advantage of starting out RIGHT, thus avoiding disappointment at the end of four or five years' labor in bringing the young orchard into bearing.

ANOTHER POINT TO CONSIDER

Growing a good tree is only part of having it do well after planting. Many a good tree is ruined in the taking up from the nursery and shipping. We give the best of service in the proper handling and delivering of our trees.

WRITE,

'phone or call on us before buying your trees. Tell us your wants and we shall be glad to give you the benefit of our wide experience as to planting, soil conditions, fertilizers, etc.

Our illustrated new booklet on citrus culture mailed to any address upon receipt of 25 cents.

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(INCORPORATED)

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California
U. S. A.

Teague trees are started right, grown right, and shipped right.

small where the feeding zone is shallow or meager. They must not only go down, but we must follow them down in cultivating the soil. The roots go down 5, 10, 20, 30 feet, and the tiller of the soil must not stop with 5, 10 or even 20 inches. It is not enough to scratch, one must dig. To simply scratch the surface is like trying to cure a child who is sick all through his system by combing his hair, or scratching his back.

The size and extent of the root system is generally overlooked, yet it is comparable to the size of all that is above ground. Wheat, oat and barley roots go 8 and 10 feet down; grasses, 5 and 6; grapes, 20; alfalfa, 30 and more.

Sanitation

Wherever there is action there is reaction. All life processes cause destruction of tissue, cells, or other forms of matter. Plants not only secrete food from the soil but excrete the excess, the used or waste material, and these toxins must be neutralized or destroyed in the soil. Certain forms of bacteria act as scavengers, clearing the soil of toxins and dead organic matter, but they cannot do their work unless the soil atmosphere, soil temperature and soil moisture conditions are right. The bacteria of some crops thrive on the toxins left by others, hence the value of crop rotation.

Tools

It must be admitted that our present means of cultivation are not up to date because they do not go down deep enough. They cultivate the surface a few inches while the soil should be stirred to a depth of several feet. If this wealth of invention and labor is worth while for the first foot, why not for the second, third, fourth, eighth or tenth?

Cultivating Deep

It is evident that any machine which must drag and bury any portion of itself deep in the soil will be heavy and expensive. The quickest way and the cheapest way yet invented to plow deep, to give proper aeration, proper moisture conditions and break up the soil so that the roots may go down 5 or even 15 or 20 feet, is by the use of explosives. They break up the hardpan, hard subsoils and improve the physical conditions of the soil to any desired depth. The great drawback has been the danger connected with their transportation, storage and use. Now manufacturers are realizing this and making brands which are safe for farm use.

Finally

Look down as well as up. The horticulturalist works cheerfully, long and hard where he can see with his eyes what he is doing. We must learn to cultivate the inner vision and to look mentally below the surface into the depths of the soil.

"EASY SCALE KILLER"

From Mr. M. E. Taylor of Ceres we have received the following comment on article appearing under the above head on Page 414 of the California Cultivator of October 29:

In your article in the Cultivator of October 29, entitled "Easy Scale Killer," you say that the Los Angeles county horticultural commission tried the method out some years ago and found the poison in the tree unabsorbed after being there for a year. Surely they could not have used potassium cyanide or they did not place it in contact with the sap of the tree. Arsenic or strychnine might remain unabsorbed for some time but potassium cyanide would disappear very quickly. Would it not be well to try it on the olive scale? The poison would be dissolved in the water in the process of pickling or oil extraction if it were taken up by the fruit. Prof. Sanford is too astute an experimenter to be easily deceived.

LOST.

The mistress of the house had mislaid her eyeglasses. She asked the old negro servant if she had seen them.

"No'm, honey," said Aunt Missouri, "I ain't seen 'em. But I'll fin' 'em fo' you. Jest tell me now was dey in de shell?"—New York Post.

About Increasing Orchard Profits

THE object of every business is to make money. If fruit growing is your business, you can only increase your profits by producing *more* and *better* Fruit, which means planting More and Better Trees.

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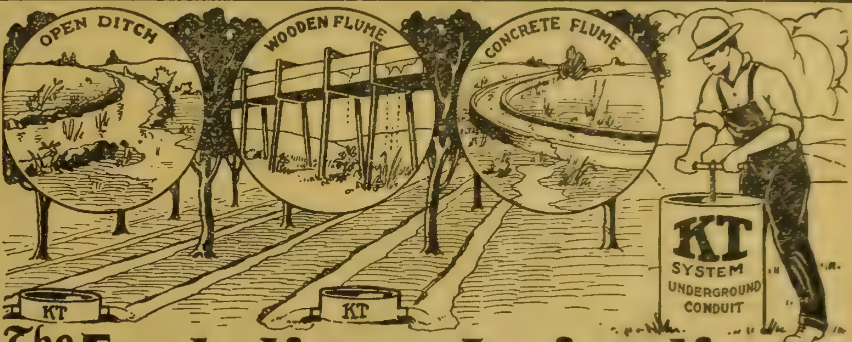

The Evolution of Irrigation

It is only a comparatively few years since practically all irrigating in California was done by means of open ditches. These gradually gave way to the use of wooden and concrete flumes. Today, however, all these methods have been almost universally superseded by the

"K-T" System

of underground conduits—which provides for a perfect distribution of the water at the exact spot required, and at just the time it is needed. Write today for the "K. T." Brown Book on Irrigation, or for any information you may require.

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All our stock is guaranteed true to name and packed so as to reach you in first-class condition. Roeding's trees grow and produce profitable crops.

We have over 2000 acres devoted to growing all the leading varieties of apples, pears, peaches, plums, prunes, apricots, walnuts, olives, almonds, oranges, lemons, pomelos, grapes, berries, etc.

BEFORE placing an order for trees, vines or ornamental stock, you should be thoroughly posted as to what is most adapted to your soil and locality—and what will be likely to bring you the largest profits or possible results.

Of course you know about what you wish to set out, and you have undoubtedly given a great deal of thought to your future orchard—but if you can secure the advice and counsel of those who have had over 30 years' experience in growing, packing and marketing products of trees and vines in your state—if you can get this advice and help FREE, isn't it to your interest to do so?

No Charge for Consultation

We have helped thousands of growers and will be glad to help you. Write us frankly about your plans. Tell us frankly what you propose setting out and we will advise with you without any obligation on your part.

ROEDING TRUE TREES FRESNO, CAL.

New Illustrated Price Catalog
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If you wish a copy of our 1914-1915 illustrated price catalog send us your name and address now—and a copy will be sent as soon as it comes off the press.

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Get the greatest production from your land by the proper application of lime.

The benefits of liming are due to its chemical, physical and biological effects upon the soil.

Chemical effects — Makes "sour" soils "sweet" by changing an acid soil condition to a slightly alkaline one. Acidity in soils is very detrimental to the growth of anything, while a slightly akaline condition is ideal. Adds to the supply of the three most essential plant foods; nitrogen, potash and phosphoric acid.

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Lime builds up the soil, restores impoverished lands and because our lime is not caustic it may be used in almost any quantity at any time. We recommend applying about one ton to the acre for beneficial results.

Nearly all lime used, no matter in what form, is prepared directly or indirectly, from deposits of calcium carbonate, chief of which is limerock, from which our ground limestone is made.

Our ground limestone for fertilizing is made of the purest quality of limerock obtainable, is an honest material, honestly prepared and ground to that degree of fineness recommended by the Agricultural Department of the University of California as rendering the greatest efficiency.

You can get immediate deliveries from us either in bulk or packed in 100 lb. sacks. Write us for further information, prices, etc.

WESTERN ROCK PRODUCTS CO.
Balboa Bldg., San Francisco

THE RIGHT KIND OF LIMESTONE

California soils have usually been considered well supplied with lime. However, practical experiments have proven that often they are greatly benefited by its judicious application. As a rule air slacked lime or sugar lime have been employed. Finely crushed lime rock is often recommended. A fund of information is given in an article appearing in a recent number of the Country Gentleman, from which we quote:

"It is difficult to estimate by simple inspection of a sample how finely limestone is pulverized. The dust covers and obscures the coarser chunks, so that the whole mass of material appears to be finer than it really is.

"In order to determine exactly the proportion of the various-sized particles in an average lot of screenings, and also of finely ground limestone, 100-gram samples of each were weighed out and screened through a nest of three sieves—the top one having ten meshes to the linear inch, the second forty meshes to the linear inch and the third one hundred meshes to the linear inch. The results of the experiment were as follows:

	Pct. ¼-In. Screenings.	Pct. Fine Limestone.
On 10-mesh sieve	39.5	0.3
On 40-mesh sieve	46.0	36.0
On 100-mesh sieve	9.5	34.3
Through 100-mesh sieve	5.0	29.4

Material Must Contain Dust

"The bad effects of soil acidity are so pronounced and the good effects of lime in such cases so profound that eminent authorities have said that an adequate supply of lime carbonate is the very foundation of soil fertility and successful agriculture. An adequate supply of lime carbonate means lime enough not only to neutralize all soil acidity but to give a slightly alkaline reaction. A limestone monument a mile high in the corner of a field is not an adequate supply of limestone so far as that field is concerned, neither is a quantity of small chunks of limestone artificially scattered over the field. In liming the soil the question of solubility must be considered.

"Only the comparatively small particles of limestone go into solution readily enough to produce immediate results. The material used must, therefore, contain enough dust to produce the desired result. Residual coarser particles will doubtless do some good, but they cannot be counted upon for immediate effects.

"A soil that is acid enough to require 1,000 pounds of carbonate of lime to neutralize the plowed surface of one acre—and this is not an extreme case by any means—must have at least 1,000 pounds an acre of fine limestone dust to render it even neutral, and a larger amount to render it basic in reaction and really suitable for the growth of legumes. It is generally believed that chemical methods underestimate the real acidity of the soil and that more lime must be applied than is indicated. In the above instance, however, it is evident that about 1,600 pounds of the limestone dust or about 7,000 pounds of the quarter-inch screenings would be required to supply the requisite amount of available lime. These estimates are based upon everything passing through the forty-mesh sieve. This, of course, is merely an empirical estimate, but it has the advantage of squaring up well with the results of field experience.

"Small applications of screenings are rarely satisfactory. The acidity of the soil is not neutralized, even though numerous small chunks of limestone remain in the soil: it is simply decreased somewhat. A case of this kind was encountered recently in Henry County, Indiana. A farmer plowed under two tons to the acre of limestone screenings, with no apparent good effects. Two years later it was easily possible to find small pieces of limestone at the bottoms of the furrows, but repeated tests showed that the soil where these particles lay was acid to litmus paper.

"In another case a farmer was advised by the experiment station to apply two tons to the acre of ground limestone. Not understanding the difference between limestone screenings and finely ground limestone, he applied the former and got no results.

(Continued on Page 465.)

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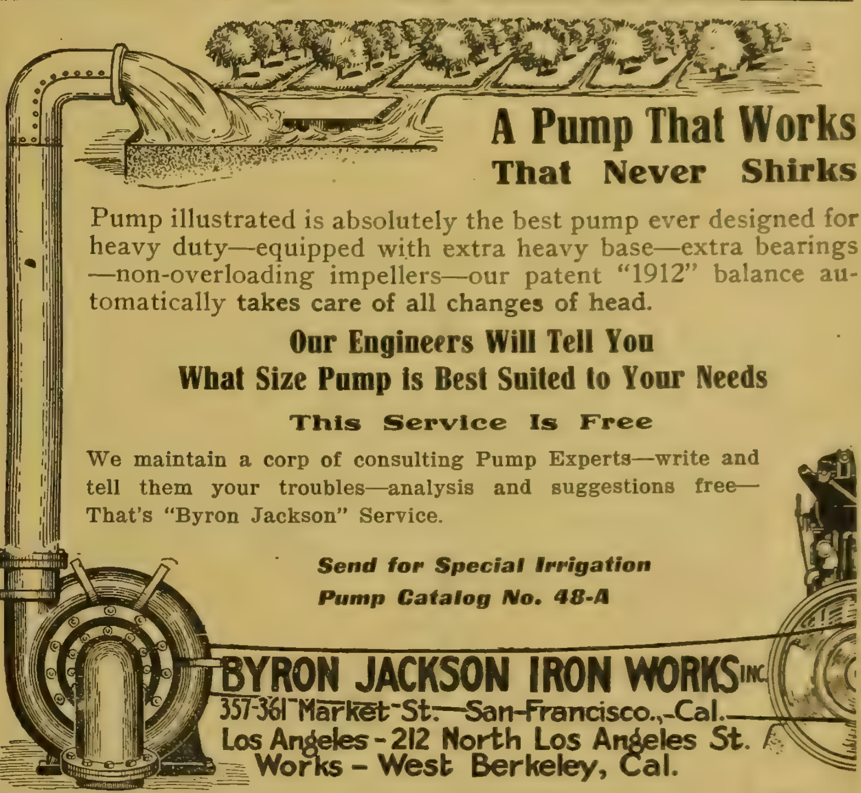

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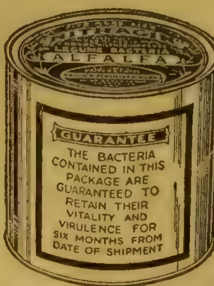
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"NITRAGIN" is the wonderful germ that unites with the legume root and draws from the air the precious *nitrogen*—necessary to *all* plant life, health and growth.

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"NITRAGIN" Pure Culture is the *original*—discovered by Nobbe and Hiltner, famous German bacteriologists; it has been improved and perfected by twenty years of testing and proving. It comes to you in *granular* form, packed in ventilated tin cans. Easy to apply—ten minutes work—a boy can do it.

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Pure Culture inoculation is endorsed by Government authorities, state experiment stations, practical farmers, agricultural experts and soil culturists. Let us send you testimonials and other *proof*.

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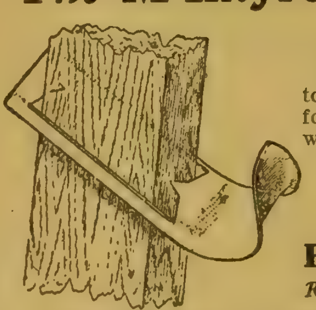

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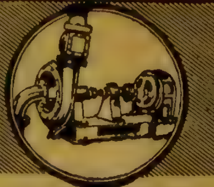

FALL IRRIGATION

Written for the California Cultivator
By Sacramento Valley Contributor

THERE are lessons we should learn every season. Now that the water is out of most of the irrigation ditches in the great interior valley, let us look back and see just what things we should have done that we did not.

Are there not a great many of us who could have used the last run of water to good advantage and we did not do it?

If any one ever lost by having his soil well filled with moisture at the beginning of the winter season we do not know of it, and any one who has lived in any of the irrigated sections of central California can recall at least one, and perhaps many, times when the rains we hoped would come did not arrive, and trees and alfalfa and other things got very, very dry before we had water in the ditches again.

Every farmer should have a diary for the succeeding year's work, on which to set down the things he should do, and some time in August, 1915, there should be an entry something like this: "Be sure to get everything on the place well irrigated before the water is turned off."

We believe that the tissues of every plant should be full and plump and well nourished all the time, and there is no time when this is more necessary than in the fall. There are many days of drying wind during September and October, and unless there is ample moisture in the soil to supply this to the plant it must come from the plant itself to the detriment of its growth for the present and succeeding season.

PROTECTION OF THE IMPERIAL

The Inland Waterways Association of California, at the semi-annual session held in Stockton, September 24, 25 and 26, unanimously adopted the following preamble and resolutions:

Whereas, the Imperial Valley is in constant danger from overflow waters of the Colorado River and has in the past been damaged seriously by overflows from this river, and is at all times menaced with the possibility of an overflow which will destroy or largely damage its irrigating systems and other property in the valley; and,

Whereas, the overflow waters leave the bed of the Colorado River in Mexican territory and flow thence into that part of the valley on the American side of the line; and,

Whereas, on account of this peculiar condition the regulation and prevention of the overflow of the Colorado river becomes a matter of national concern requiring the intervention of the United States and agreements between that government and the government of Mexico, and the same cannot be regulated or controlled by either local or state agencies.

Therefore, be it resolved, that we earnestly favor such action on the part of the United States government as will result in protecting the Imperial Valley and the $75,000,000 of wealth that the people of that valley have developed within recent years from the disastrous effects of the overflow of the Colorado river, and we recommend the immediate appropriation by the congress of the United States of a sufficient fund to establish such retaining levees and other works as will protect the Imperial Valley from the danger of overflow.

ALKALI IN IRRIGATION WATER

It is quite impossible to make an accurate general statement as to just what percentage of soluble salts, commonly called alkali, irrigation water may contain without being prohibitive for application to crops. Very little water indeed is too alkaline for irrigation under proper conditions. The permissible percentage of soluble salts depends not so much upon the quantity in the water as upon the kind of salts that are in solution, and the physical character of the soil to which it is to be applied. The one fundamental which should be observed is that any land to which very alkaline irrigation water is to be applied should have good drainage. A heavy, compact soil with poor underdrainage will be damaged by a comparatively small alkaline content of the irrigation water, while a sandy soil with a loose subsoil and good drainage would show no damage from irrigation water many times stronger in alkali.

Another fundamental is, at least where the land is inclined to be heavy, the alkali water should be applied to it in quite heavy irrigations. This excessive amount of water will have a tendency to prevent surface accumulation of salts and will wash the salts downward through the soil and away from the feeding zone of the plants. Light irrigations with such water would allow practically all of the water to evaporate from the ground surface with the result that virtually the total amount of alkali carried in the water would remain in the soil and accumulate with each successive irrigation until the danger point is reached.

Whenever water is considered to be dangerous for irrigation because it is alkaline, it is best to plant such crops as permit of the greatest flooding of the land, and those crops which are usually forage crops will not only stand, but require heavier flooding than other field crops.—V. M. Cone, Colorado Agricultural College.

QUITE DIFFERENT

Little Mary had been sent to the store by her mother to get some fly paper. She was a long time in returning, and the mother began to get anxious. Going to the door she spied the little girl coming up the street, and called to her, "Mary, have you got the fly paper?"

"No, mother," replied Mary, "it's got me; but we're coming together."

WHERE IGNORANCE IS BLISS

"Was that your intended that you were walking with?" "Yes, but he hasn't yet caught on."—Life.

A Tip on Almonds

On this continent Almonds are grown only in California. The American market alone demands *four times* the present supply.

With practically an unlimited home market and a monopoly of the product

Plant Almond Trees if you are seeking a real money-making investment.

We have an extra fine lot of trees growing on Bitter Almonds, Peach, and Myrobolan Root, but as there is usually a shortage of trees on Bitter Almond, place your contract immediately—don't delay.

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SECOND HAND PIPE AND CASING

All our pipe and casing has newly cut threads with new couplings attached and dipped in asphaltum. Guaranteed good as new. Prompt delivery on carloads or less. Small orders receive same attention as large ones. All sizes of pipe, also fittings and valves.

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Plant Prune Trees

The demand for Prunes is constantly increasing and California must supply this demand. With a cheap water rate thru to the Eastern states, giving California growers control of this market, prune trees become

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In the export market they compete successfully with European grown varieties.

Our parent trees of French, Imperial, Sugar and Robe de Sargent have been carefully selected from trees having the best record of QUALITY, PRODUCTIVENESS AND SIZE OF FRUIT.

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Scalefoe Kills

Red, Black and Purple Scale also the Red Spider and other insects, worms and bugs.

Does not hurt the plant or tree.

Quart, 20c; 2 quarts, 35c; gallon, 50c; 5-gallon can, $2.00, freight paid.

Special prices by the barrel.

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For fall and winter planting; also Flower Seeds for fall sowing. New Catalogue now ready, mailed free upon application.

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IRIS Illustrated catalog containing valuable information, and beautiful color plate, 15 cents.
List with prices on over 200 varieties free upon request.
THE DEAN IRIS GARDENS, Moneta, Cal.

RIGHT KIND OF LIMESTONE

(Continued from Page 463.)

Later be applied to another part of the field two tons to the acre of finely ground limestone, with the best of results. The sole reason for the failure of the screenings in both these cases lay in the small amount of fine dust applied and the comparatively slow solubility of the coarser particles.

"In the cases just cited the soils were rather closely grained silt loams with but little organic matter in them. Doubtless better results might be secured in the case of open, sandy soils, in which the limestone would dissolve somewhat more readily, but even in such cases it is better to use really adequate amounts.

"A large application of screenings will outlast a smaller application of finely ground limestone, but there is plenty of room for debate as to which is the more economical. Advantage may be claimed for the screenings in that a single application lasts longer and the same land does not have to be gone over again so soon, and that there is a larger excess of lime carbonate in the soil for a time after liming, which is very beneficial to certain crops. Furthermore, the first cost of material is much less.

"On the other hand, it must be borne in mind that the labor cost of handling the necessarily large amount of material is quite an item, particularly in the case of long hauls, and the excess of undecomposed lime carbonate in the soil is subject to heavy losses by leaching, so that a considerable amount of it leaches out without doing any good.

"Limestone applied in the presence of soil acidity combines with acids, but limestone that is lying in the soil waiting for acidity to develop may get washed away before any need of it arises. This condition makes it plainly unwise to apply any very large excess of the relatively soluble finely ground limestone, and throws some doubt on the advisability of liming with any kind of lime very much in advance of immediate needs of the soil.

"However, important as it may be to know something about the various kinds and grades of lime and limestone in order to get the desired results most economically, the main thing to bear in mind in the case of acid soils is that any kind of lime—burned lime, slaked lime, limestone screenings, limestone dust, marl or shells—is much better than no lime at all. Application of lime to soils deficient in it means fewer failures and bigger yields of clover, which, in turn, if wisely utilized, mean more nitrogen and organic matter in the soil and larger yields of all other crops in the rotation."

THE FERTILITY OF THE SOIL

The Fertility of the Soil by Edward J. Russell, D. Sc., Director of the Rothamsted Experiment Station, published by Cambridge University Press and G. P. Putnam's Sons, New York, price 40 cents. The Cultivator will be glad to secure the book for its subscribers at the above price or, including a year's subscription to the Cultivator, at $1.30.

The book is small enough to carry in the coat pocket and big enough to give a world of information regarding soil fertility. It contains nine chapters, with a bibliography and an excellent index. It discusses natural history of the soil, how plant food is made in the soil, what is fertility and how maintained, raising of the fertility limit, and many other most interesting topics.

"To those who have never thought about the matter the study of the soil may seem very trivial; it has neither the glory of the celestial nor the glamour of the unfamiliar; it is associated with such unintellectual and mundane concerns as food production, and has no place in our ordinary conception of a refined and liberal education."

It is said that the forest service contemplates a decided change in the present regulations governing the issue of permits in the Wichita, Washington, national forest. The plan provides for a 10 per cent reduction upon permits above the protective limit held by owners of improved ranches and a 20 per cent reduction upon permits above the protective limit, held by persons who do not own improved ranches in the vicinity of the range.

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Big news for you farmers! Now you can have a tractor on your place—in fact, you can't afford to be without it. $495 buys the Bull Gas Tractor. Designed by men who have specialized in tractors for years. The Big Four "30" was their creation—now the sturdy "Bull" comes because these experienced men realized that there was a gigantic demand everywhere for a small tractor. After constant work they perfected the Bull Gas Tractor. They eliminated one of the big bull wheels and thus eliminated a lot of other expensive and heavy mechanism, such as in the frame, axle and differential gears. Every part of the "Bull" is easy to get at—you don't have to take the tractor all apart to repair some little piece of machinery.

The BULL TRACTOR

The "Bull" is a 3-wheeled machine—two in a hard, smooth furrow, one on the stubble. One of the furrow wheels guides the machine when plowing, relieving the driver of that responsibility. It has a leveling device by which the operator can readily level tractor when on side hills. Has but 5 working gears (think of it—only five). Has but one drive wheel, thus needs no equalizing gears. Has but one main drive gear, which will last during life of the tractor. Motor is two-cylinder, four cycle, water-cooled type—no better motor on the market today anywhere!

The Bull Tractor delivers 12 horsepower at the belt, 5 horsepower at the drawbar and is built to do the daily work of 5 ordinary horses. It travels faster than horses—and keeps right on going. Never gets tired. Costs nothing for harness. Costs one-half as much for gasoline as for horsefeed. Never eats when not working. Never gets sick. Gets your work done better, cheaper and on time. It's the best paying investment you could possibly put out on your place, whether you have 80 or 800 acres. The "Bull" is not only a tractor—it's an expert at everything! Here's what it does:—

Pulls Plows, Seeders, Harvesters, Mowers, Drills, Discs, Grinds Feed, Saws Wood. Does Any Stationary Belt Work.

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Euclid, Minn., May 11th, 1914.

I have the "Bull" hard at work and it is pulling three bottoms in the stubble, and I believe it will haul four. I have had from fifty to one hundred visitors every day, and it proves to be one of the best tractors ever built.

JOHN BIEVER.

Bird Island, Minn., April 24, 1914.

The "Bull" is working finely. I pulled a six-horse road grader at an average speed of four miles an hour yesterday, and six horses can't average over three miles per hour at their best.

HEANEY & PALMLUND.

Hingham, Mont., June 10th, 1914.

The Tractor that we got is working every day, plowing from four to five acres per day and eight inches deep with a harow behind it, and does elegant work.

KIMPEL IMP. & HDWE. CO.

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Doesn't this sound good to you, Mr. Farmer? Wouldn't you like to have one of these $495 Tractors on your farm? Haven't you waited for years for a tractor of small price, knowing that some day it must surely come? Every shrewd farmer has—and now the "Bull" offered at a price so low that no business-farmer is going to be without one! Certainly no farmer is going to keep and feed 5 hungry horses all the time when he can get the Bull Gas Tractor for $495.00. It seems perfectly logical and practical, doesn't it? Then write to us today for our illustrated booklet. It's free—we'll be glad to mail it to you. Address

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A wonderful bargain! Made of finest galvanized 24-gauge steel. Outside finished with a rich sky-blue enamel, bronze trimmed. Price only $8.00
Others larger in size at $8.50, $9, $10. Just the thing for your house.

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8,000 rods of 6-in. galvanized mesh extra heavy field wire fence. Perfect condition. 55 in. high, 20 rods to roll, special while it lasts at only, PER ROD ... 35c
This is just about half price. Don't pass up this big opportunity. Send us your order. your money back if you are not satisfied.

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Economics on the Farm

WARNING AGAINST CHEAP LOAN SCHEME

(This warning is sent out by the United States department of agriculture.)

SOME one recently remarked that it was astonishing how hard some men were willing to work in order to make a dishonest living. The field of rural credit is already producing a number of examples. Certain companies are actively at work promising farmers cheaper money than anybody else is able to get on equally good security. The eagerness with which some are accepting the bait is one indication of the need there is for a sound system of rural credit. It is not wholly the fault of the farmer who is taken in. A great deal of mental energy, combined with marvelous skill, is expended in preparing soul-compelling circulars which seem to promise the farmer everything, but really promise him nothing. If as much thought and skill were exercised in trying to convert sinners, we should be very near the millennium.

Stripped of verbiage and words which darken rather than enlighten, the scheme is essentially as follows: Such a company offers to lend you money on good security, at say, three per cent interest, and to allow you to repay the loan in easy monthly installments on the amortization plan. This sounds alluring, and, if you are not too persistent in asking what you are to get and when you are to get it, you sign an application for a loan on these favorable terms. In a few days you receive from such a company a contract for the loan for which you applied. The contract which you receive is duly signed by the officers of the company. Then you realize that the application signed by you and the contract signed by the officers of the company together constitute a valid contract, and that you are now in for it.

Under the terms of the contract you are to begin at once paying off the debt of, say, $1000 at the rate of $10 a month, but you have not got your $1000 yet. Moreover, you do not know just when you will get it. The only thing you know is that you have got to go right on paying $10 a month. You have, however, the promise that whenever the company has the money to spare, you will get your loan. Another way of saying the same thing is that when your turn comes, you will get it. This means that such a company has not the money now, and that there are several other gentlemen whose turns come before yours. As fast as the company gets money it lends it out to these men each in his turn. When your turn comes, if the company lasts that long, you will get your money.

Now, where does this kind of company get the money which it is going to lend to you and the other gentlemen who have signed these contracts? Why, it gets it from you and those same gentlemen, and from no one else. Speaking to all of you collectively, it says, in effect, "Gentlemen, this company has no money of its own, but if you will pay your money into its treasury, we will then be glad to lend it back to you, if you will give good security, on very favorable terms indeed."

If such a company ceased getting new contracts, it could not lend you your thousand dollars until you had paid in a thousand. It has no other source of income, and it cannot create something out of nothing. If it continues to get new contracts after yours, then it can take the money paid in by those who follow you to lend to those who precede you. In this way your turn may come before you have paid in quite the full amount which you expect to borrow. But those who follow you will have to wait still longer on that account. If new applicants should sign up rapidly and in large numbers and begin paying their good money into the company, the company may then be able to give you your loan tolerably early. But that only postpones the evil day. Those who follow you in such numbers will have to wait longer and longer unless the applicants should continue increasing in a geometrical ratio. But the longer this sort of thing goes on the greater will be the smash when it comes.

Unless you have been initiated into the mysteries of geometrical progression you may imagine that this sort of thing can go on indefinitely; but if you will take your lead pencil and figure a while you will find that in order that you may get your loan within a year there must be about 10 times as many applicants next year as there were this. In order that they may get their loans within a year, there must be 10 times as many applicants the following year as next year, and so on indefinitely. Now, if there are 1000 applicants waiting for loans this year, in 10 years there would have to be, at this rate, 10,000,000,000,000 new contracts in the tenth year. This is nearly 7000 times the present population of the earth.

But if you and all the applicants are willing to wait five years for your loans it would only take 1,024,000 new contracts in the tenth year to keep the company going. By the thirteenth year there would have to be 8,192,000 new applications. There are about

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Every building on your farm will be a better, more valuable building if you give it a Certain-teed roof! The label on
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guarantees 15 years' service. No "test" for toughness, pliability or anything else can give you advance knowledge of how long a roof will last
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6,500,000 farms in the United States. If there were several companies like this operating on our farmers, you can see that the competition among them would, by that time, become what might be called severe.

But why mince matters? Everyone who has ever studied the question knows perfectly well that this sort of business is foredoomed to failure. There are only two possible conditions under which it can possibly last, and both these conditions assume a degree of foolishness on the part of the American farmer of which even his worst enemy would not accuse him. One is that he will be willing, in considerable numbers, to continue paying his monthly installments into the treasury of the company until he has actually paid in as much as he expects to borrow back. A savings bank would be better, because it will allow him interest on what he pays in, and when he draws out what he has paid in, he does not have to pay any interest, not even three per cent. The other is that so many of those who begin paying in their monthly installments will get tired of their bargain and quit, as to enable the company to take their money and make loans to the few who stick to it. If nine out of every ten who pay in money stop before they get their loans, the company may then make its loans within a reasonable time to the troublesome one who sticks to them. Under no other condition whatever can such a company last many years. One can predict its failure with the same certainty that one can predict the death of a human being. In neither case can one predict the day and hour, but that the event itself will occur within a nameable period is absolutely certain.

If, instead of paying $10 a month into the treasury of one of these companies, one were to deposit $10 a month in a savings bank, which would allow him interest month by month on all his deposits, the following table shows what he would have to his credit at the end of each year. The first column shows what he would have to his credit in a savings bank that allowed him three per cent; the second column shows what he would have to his credit in a savings bank that allowed him four per cent. It will be noticed that in either case, by the end of the fourth year, he would have to his credit more than $500:

End of—	3 per cent	4 per cent
First year	$121.95	$122.60
Second year	247.56	250.10
Third year	376.94	382.70
Fourth year	510.20	520.61
Fifth year	647.46	664.03
Sixth year	788.83	813.19
Seventh year	934.44	968.32
Eighth year	1084.42	1129.65
Ninth year	1238.90	1297.44
Tenth year	1398.02	1471.94
Eleventh year	1561.92	1653.42

EXPERIMENTS WITH TEPARY BEAN

The tepary bean is proving a wealth maker for some of the hotter desert sections of the Southwest. It has been proven out and selected for hundreds of years by the Indians and perhaps by prehistoric tribes. We are glad to give the following, by Mr. Geo. C. Clements, touching upon conditions in Riverside County:

I desire to report on my second year's experience with the white tepary bean, which, through the kindness of Mr. Clothier of the Tucson Agricultural College, I brought into Riverside County last spring.

As a rotation crop in lieu of summer fallow I had the following return: May planting, listed, one cultivation, 600 pounds to the acre, soil red adobe. May planting, listed, neglected, 400 pounds to the acre, soil the same. Another field of two acres was lost, the quail and rabbits totally destroying it.

As a cover crop it proved a great success. In a young two-year-old lemon grove it ran one and one-half to two tons of cover crop, and a portion which I matured threshed out 1700 pounds to the acre. In an old orchard I made a failure, due to quail.

The season was too cold for the bean to do its best. It needs lots of heat and to be let alone as much as possible. Irrigation, if used, must be done sparingly or it will produce successive crops and shatter badly.

I find that as a rotation crop with grain it is a success, and as it is superior to the navy as an edible bean, should have a great future. Any stock, cattle, horses or swine, hens, ducks and turkeys eat the bean hay and enjoy it, so there is no loss attached to its growth or cultivation.

More extensive rice culture is being urged for Florida.

OH! MIKE!

Pat—Have ye christened yer new baby yet?

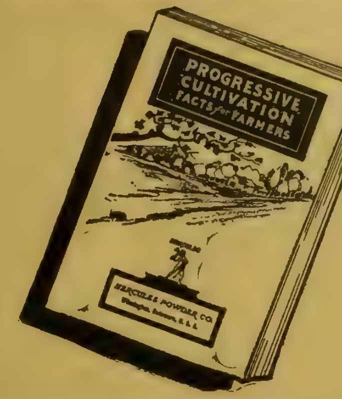
Mike—We have.

Pat—And phwat did ye call it?

Mike—Hazel.

Pat—Er'a, glory be to God; 223 saints to name yer kid after and ye had to go and name it after a nut!

The Use Of
Hercules Dynamite
On Farm, Orchard and Ranch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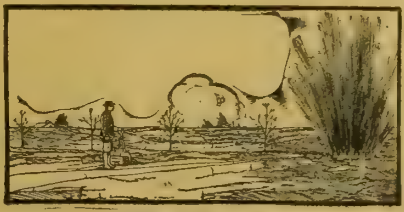
The Best Way to Plant Trees

Those who have once used Hercules Farm Dynamite for the planting of trees never employ any other method. They find that, in the first place, the planting is done much more quickly and easily than when a spade is used to do all the work. Secondly, and still more important, the benefits to the tree are so great and so valuable that the method which produced them becomes the *only* method to the idea of the experienced.


Blasting the Hole

The difference between the growth and yield of a tree planted in a dynamited hole and one planted in a spade dug hole are almost unbelievable.

Planting the Tree

During the first year alone the development of the former will be almost twice that of the latter. When the trees begin to bear the yield of the one which has received the benefits of dynamite is much greater than that of the other. Its fruit is larger and of a better flavor.

When you have trees to plant don't fail to use Hercules Farm Dynamite. In "Progressive Cultivation" you are told just how to use dynamite to produce more, and better fruit.

Breaking Rocks with Hercules Dynamite

The illustrations reproduced here show well the efficiency of dynamite when used to break up rocks and boulders preparatory to removal.

Before

The rock in question was blasted by means of a mud-cap. The dynamite stick was laid upon the rock at the point which one would naturally strike if attempting to break it with a hammer. The charge was then covered with a quantity of mud pressed down firmly. In the lower picture the result of the discharge is shown. The entire operation takes but a few minutes, and at the end of it the rock is broken into small pieces easily handled and removed on a stone boat.

After

For large boulders or rocks deeply imbedded in soil the snake-hole or block-hole method of blasting should be used.

In "Progressive Cultivation" these methods are described in detail. Write for this book.

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The California Cultivator

Rural Californian combined with the California Cultivator

A Journal of Horticulture and Agriculture

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Thursday, Nov. 12, 1914

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We guarantee our subscribers against loss through dishonesty of any advertiser in the Cultivator. We do not attempt, however, to adjust trifling differences between subscribers and honest, responsible advertisers, nor will we pay the debts of honest bankrupts. Notice of complaint must be sent us within 30 days from date of the transaction, and the subscriber must have mentioned the Cultivator when writing the advertiser.

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FINE EXHIBIT

The educational force of the recent fruit growers' convention was greatly increased by the exhibits of farm and orchard appliances and implements. It is practically correct to say that there were hundreds of these different exhibits, and almost everything that would interest the orchardist was on hand at the convention. There were some seven or eight tractors, and trucks were still more numerous, and of course cultivators, together with similar implements, made up an exhibit almost equal to that at the recent state fair at Sacramento.

This is the first attempt to make such an exhibit at a state fruit growers' convention, but we do not believe it will be the last, for we think those making the exhibits were repaid for their efforts, and surely the orchardist was.

VALUE OF CONVENTIONS

One great value of state conventions is that they give opportunity to see representative men in all lines of effort. At the state fruit growers' convention were such men as J. H. Hale, a great peach grower and great orchardist generally, in fact a great man. E. H. Grubb, the potato specialist, was in good company in mixing with the orchardists, and brought a fund of information regarding his European experience to the special potato session. In addition, there were specialists from the United States department of agriculture and a great number of practical orchardists of this state.

Fruit growers should make more of the opportunity offered by these conventions. The attendance at Los Angeles was good; it should have been far better, however, considering its value.

SERIOUS DISEASE

A most serious condition faces the live stock interests of Chicago and in fact many points of the Middle West. This is a serious outbreak of the foot and mouth disease. The Chicago stock yards have been quarantined, as have several other important shipping points. This disease has appeared in this country two or three times before and is so serious that the department of agriculture has gone after it with such vigor that it has been crushed out. The present outbreak is by far the most serious that has ever visited the country, and it seems to have appeared almost simultaneously in many different sections. It has been charged that the department has not gone after it with its usual vigor. We are not informed on this point, but we trust most thorough work will continue until it is absolutely stamped out. This has been done; it can be again.

TIME OF TRANSITION

An attendant at the state fruit growers' convention, in session this week in Los Angeles, remarked that matters horticultural, especially as to legislation, were in a state of transition, that is, there would be many changes within the next few years or even within the next few months. A representative legislative committee has been at work for a year or more discussing matters of legislation affecting the fruit industry. There is much confusion at the present time owing to diverse ways of handling matters that are of vital importance to orchardists. The nurserymen especially find themselves unable to get a bearing on the various ordinances which obtain in the different counties. As stock which is received with satisfaction in one county is forbidden entrance to another, nurserymen say that it is almost impossible to conduct a state business. One of California's largest nurserymen has asserted that if this state of affairs continues it will be but a short time until nursery stock must all be brought in from outside the state for the nurserymen within the state cannot live under the present management. The horticultural commission grants that much of the contention of the nurserymen is true.

Will the present county horticultural commission system remain? Will the state horticultural system remain? Will the state board of agriculture remain? Or will all of these be changed and a more consistent and effective organization, similar perhaps in effectiveness to the United States department of agriculture, take its place? This has been suggested, in fact a committee was appointed at the horticultural commissioners' meeting to draft certain changes from the present horticultural law. These will probably be referred to the larger and more general legislation committee. Many favor, instead of the present county system, a state district system which shall ignore county lines, but take into consideration topographical lines, including in one district certain sections that lie similarly and have similar fruit products.

Certain it is there will be many changes in California horticultural matters, and we believe more satisfactory conditions will be brought out of what now appears to be chaos.

GOOD FARMING

Good farming—just plain, ordinary, common sense, fundamental farming— is the foundation for success in every branch of this industry.

Nowhere is this more emphasized than in the discussion of the potato industry that is so greatly interesting California and Pacific Coast growers now.

For years Hon. E. H. Grubb, the great potato authority of Colorado, Idaho, California and the world, has been preaching "rotation of crops," "grow grass in order to have sod land to prepare for a potato seed bed," "raise live stock on every farm," "use vigorous, healthy, well stored seed"—and a long list of things that are the fundamentals of every kind of farming everywhere in the world.

Foreign experts like Dr. Westerdyke and Dr. Appel tell us these same things and emphasize good cultural methods and proper fertilization—the same as Mr. Grubb has been doing—and they all urge the use of commercial fertilizers as another factor for maximum yields and profits.

There has been too much "hit or miss" speculative farming in California and the west—too many who say "Well, I'll take a gambler's chance at a crop—if I win all right—if I lose all right." Improper attention to details, under capitalization and a lack of realization of the fact that farming is a long time business that must have a well thought-out plan for operation covering a long period of years, make many such farming ventures a failure. And when they fail they hurt the operator—in spite of his gambler's spirit.

Sometimes so much has been invested in these farming propositions that they gradually become organized along sound farming business lines, but more often they fail and the organizer, promoter or capitalist condemns farming.

Mr. Grubb brings to us from Europe a more firm conviction than he has ever had that we must come to the careful, well planned, diversified farming methods of England, Scotland and the countries on the continent. And he is more than ever enthusiastic about California as a place where diversified farms—fruit, field crops and live stock—can be made to produce greater per acre returns in money, satisfaction and joy of living—than anywhere else in the world.

Agricultural Notes

The Pacific International Livestock Exposition will be held at the Portland Union Stockyards, North Portland, Oregon, December 7-12.

The Panama canal was closed to traffic five days, October 15-20, by a landslide in Culebra cut. Fifteen ships were detained one or more days each and will have claims on the government for demurrage.

Florida's county demonstration agents are reported as doing most excellent work. Especially successful has been their work in hog cholera serum inoculation. In the one county of Alachua alone more than 4000 head of hogs have been inoculated since May 1.

For the first time in several years the railroads of Texas are able to take care of the autumn traffic without experiencing blockades of loaded cars of cotton at Galveston and at interior concentrating points. This because the European war has prevented movement of the raw cotton to manufacturing centers across the ocean.

The 11th annual meeting of the Farmers' Educational and Coopera- Union of America was in session the last week in October at Fort Worth, Texas. More than 2000 delegates were in attendance. The principal issue before the meeting was the cotton situation in the South. Government aid to the cotton growers was strongly urged.

According to newspaper reports investment bankers are urging that the interstate commerce commission grant the petition of the eastern railroads for a five per cent increase in freight rates because of the psychological effect "a change in the attitude of the commission toward the railroads" would have on foreign investors in railroad securities.

On the spelling of "coconut" the Ceylon Morning Leader gives the following: "Sir Edward im Thurn, speaking before the Royal Horticultural Society, said the nut now known as 'coconut' was similar to the face of a monkey, and so the Spanish word 'coco,' meaning a grin or grimace, was attached to it. When Dr. Johnson was writing his famous dictionary he had an article on the 'Coconut,' but a careless proofreader passed a mistake in the spelling of the word, the compositor having inserted an 'a,' and the word appeared as 'cocoanut.' This spelling became general, but the nuts are now known as 'coconuts,' 'kokernuts,' and 'kokers.'"

The Barbados Agricultural Review gives some interesting uses of sugar: "Sugar and molasses are said to be used in the shoe-blacking industry to a considerable extent. Soap-making finds a use for sugar in the place of glycerine. Copying ink is made of one part of sugar added to three parts of ordinary ink. * * * The walls built in this island some two centuries ago are said to have been built with some molasses put into the mortar. Even in the tanning industry and in silvering of glass mirrors, they say sugar is used. We would urge scientist to go forward and find some more uses for our staple commodity in this progressive age." The Hawaiian Forester adds: "Experiments are being made in Honolulu with molasses as a binder of broken coral in road construction, oil having been proved unsuitable for mixing with coral, although the right thing for binding other macadamizing material."

Agricultural News Notes of the Pacific Coast

Northern California

D. W. Thorne of Placerville has recently purchased a herd of 225 Angora goats from Modoc County.

The Yolo County farm bureau held its first annual harvest festival at Woodland, October 30. Agricultural exhibits were made by all the farm bureau units.

Placer County is now considering the organization of a farm bureau and securing a county farm adviser. For this purpose a meeting was held in Auburn, October 31.

Three-year-old Bartlett pear trees on the P. R. Cox farm on the Packer tract of the Sacramento Valley Irrigation project in Glenn County produced 30 pounds of fruit per tree.

Work on Reclamation District 1001, in Sutter County, is nearing completion. When it is finished in the spring it is estimated that 33,000 acres of land will be opened to agriculture.

A prune growing center is being started in Glenn County northeast of Willows. Among those who have plantings are Leo Mitchell, S. Severance, Guy Waite, Baker Bros., R. V. Fox and Mrs. O. Goldsworthy.

It is expected that the survey of the Anderson-Cottonwood irrigation district in Shasta County will be finished the first part of this month, when a mass meeting of all irrigators will be called at Anderson to discuss ways and means of best carrying out the project.

Central California

The Associated Raisin Company has decided to feature family packages of raisins for holiday shipment.

A plant has been established near Woodlake, in Tulare County, for the manufacture of syrup from sorghum. The product is declared to be equal to that of the southern states.

Arizona stockmen who have been looking into the possibilities of Kings County as a beef raising section claim that from $15 to $20 can be realized in 90 days on alfalfa fattened stock.

The annual meeting of the stockholders of the Fresno County Agricultural Association will be held December 2, at which time directors and officers for the coming year will be elected.

Two apiarists of Kings County have prepared unique exhibits for both the Panama-California and Panama-Pacific expositions by placing foundation cones in sections to spell out the words "Alfalfa Honey." The letters stand out transparently with striking effect.

One hundred acres of farm land on which four men and four horses will be employed have been leased by the West Coast Potato Association at Stockton. Half of the land will be used for the production of seed, free from disease, and the other will be used for experiments in crop rotation.

Southern California

Chili pepper growers of Garden Grove are planning to form a cooperative marketing association.

Fruits and vegetables form a portion of the exhibit at Oceanside's annual chrysanthemum show.

A petition is being circulated in the northern section of Imperial County for the appointment of a dairy inspector in order to keep up the standard of the output of the dairies in that section.

The following officers were elected by the La Habra Citrus Association for the coming year: A. M. Otis, president; William Espolt, George H. Kibler, W. L. York, J. B. Chaffee, C. W. Milhaus and N. T. Edwards, directors.

At the recent annual meeting of the San Fernando Fruit Growers Association the following board of directors was chosen: R. H. Wilkinson, R. H. Maclay, H. P. Canby, B. F. Wolff, L. H. Peters, F. A. Fletcher of Whittier, F. D. Parker.

Investigations in the manufacture of olive paste have been successful. It is hoped that this will lead to more complete utilization of the olive crop, since the demand is for a large size pickle, and a certain proportion of even the larger varieties is too small for pickling purposes. While these small olives can be used for oil, the paste promises to give far better returns to the grower when a demand for it has been created.

The Coast

A thousand carloads of apples will be stored in the Payette Valley of Utah this fall to await more favorable market prospects.

Northern Cochise County in Arizona has formed a good roads association. J. A. Blanks of Bowie was elected president and Willard Belknap of San Simon secretary.

Four thousand head of cattle, valued at approximately $130,000 will be shipped from Lordsburg, New Mexico, soon. June shipments from Lordsburg totalled $200,000.

The eighth annual convention of the Arizona Cattle Growers' Association will meet at Douglas January 4-6. At the same time the Cochise County Cattle Growers' Association will meet.

The voters of Roseburg, Oregon, last week voted to authorize a $500,000 bond issue to assist in the construction of a proposed railroad from Roseburg to Coos Bay, Oregon, in order to secure rail communication with the Pacific ocean, which has been projected for nearly 40 years.

Nearly 25,000 head of cattle was the month's total of cattle shipped from Arizona to the Los Angeles market. The estimated value of these cattle is around $1,300,000. Most of them will be used in Los Angeles and nearby towns for local consumption. If driven in single file these cattle would make a parade nearly 50 miles long.

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"Your Pomona Pump has run 2712 hours, pumping 113,904 inches of water with no trouble and not one cent for repairs."

"Pomona Pumps are not to be compared with other pumps; they are in a class by themselves."

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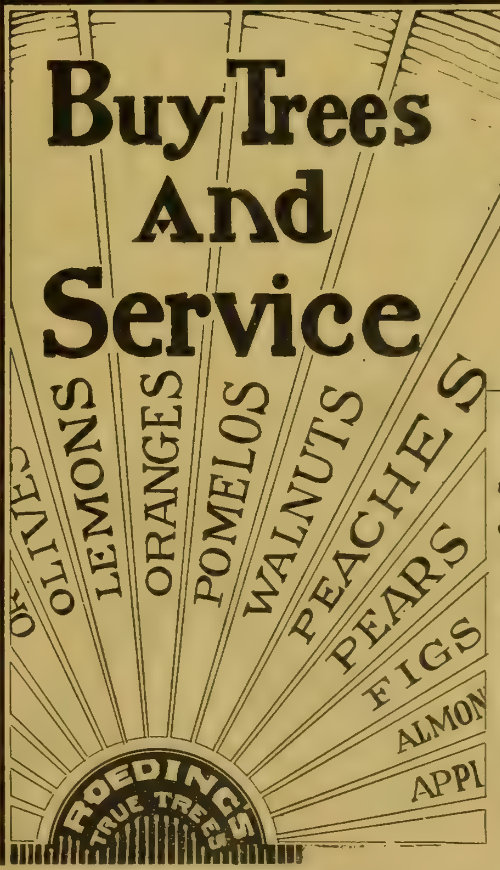

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and get it up ready for this last crop of alfalfa when it matures. You can commence feeding it just as soon as the silo is filled, and by next spring it will be empty and ready to receive the first cutting, that as hay is usually not worth handling, because of the weeds it contains and the trouble experienced in curing it.

Nothing excels silage, especially legume silage, during the dry summer months for keeping up the flow of milk. Next spring's filling will carry you through the best part of the summer, with the silo ready to receive that crop of corn next fall, thus providing a juicy succulent feed all winter which will permit you to reduce the amount of mill feed necesary to buy at least 50 per cent, a saving more than sufficient to pay for the entire outfit.

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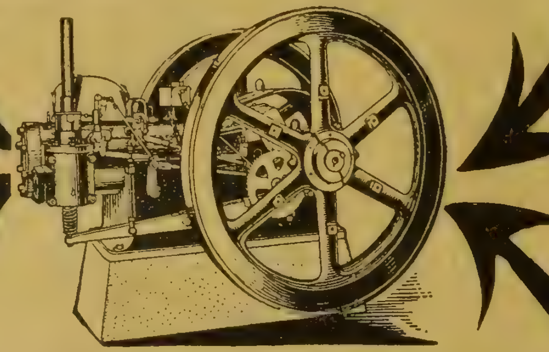

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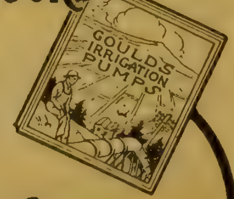

Not mere booklets, but two complete up-to-date books, full of valuable data on these important subjects. No rancher should be without them.

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Live Stock and Dairy

PROFITS FROM ALFALFA

Written for California Cultivator

By Leroy Anderson

WHAT would be the probable average net profit per acre from alfalfa where it is fed to dairy cows, water for irrigation being pumped 100 feet? Of course hogs would also be run in conjunction with the dairy. This is in the center of the Santa Maria Valley where natural gas can be had for 50 cents per 1000 cubic feet or electricity for $50 per horsepower.—Subscriber, Santa Maria.

It is as impossible to give profits from alfalfa growing as it is from the banking or grocery, or any other business. It is a matter controlled by so many different conditions, primarily that of business ability, that is impossible to tell. However, this question was referred to Dr. Leroy Anderson for more specific answer, at least as to general principles.—Editor.

Yes, it is quite impossible to give profits from alfalfa growing. This year the alfalfa grower who produced hay for market finds little if any market and consequently loss instead of profit. With good dairy cows to eat the hay the story is different. The most that I will attempt is to touch upon some of the major points and in so doing certain premises must be assumed.

It may be safe to estimate that one and one-half acres will carry one cow and her proportion of calf and hog pasture. The cow ought to produce 250 pounds of butter-fat per year which at 30 cents per pound average price is a gross return of $75. The by-products such as her calf and her proportion of hog returns may be calculated at $25 more, or $100 per cow for each one and one-half acre, or $67 per one acre. The average production of butterfat for California cows is about 150 pounds. Thus it will be seen how much better than the average the cow in question must be.

Not knowing the size of the ranch, let us suppose it to be 80 acres, for we must have some area base in calculating cost of irrigation. The relative cost of pumping by electricity at $50 per horsepower per year or natural gas at 50 cents per 1000 cubic feet is given me by Professor Etcheverry of the university irrigation department as follows: The 100-foot lift would require, for a No. 4 centrifugal pump throwing about 400 gallons per minute, a 20 horsepower electric motor or a 25 horsepower gas engine. The cost of installing the electric plant would be $1,200 and of the gas engine plant $1,800. The fixed charges, i. e., depreciation, interest and repairs, would be 12 per cent, or $144, on the former and 17 per cent, or $300, on the latter. Assuming that there would be four irrigations annually of about six inches each, or a total of two acre feet per acre, the cost of irrigating them is:

Gas engine plant—Fuel cost, $250; fixed charges, $300; operation, $130; total, $680, or $8.50 per acre.

For electric motors — Electric energy, $1,000; fixed charges, $144; attendance, $65; total, $1209, or $15 per acre.

We have then an annual cost of at least $8.50 an acre for water. For two acre feet of water there would be required 90 24-hour days of continuous pumping to cover the 80 acres. This would mean two men, or one man for 180 days at $1.50, or $270, which is $3.50 an acre. Five cuttings would be a minimum yield probably in Santa Maria Valley, and this would cost $2 a cutting to mow, rake and put into stack or barn, or $10 an acre. We have then $8.50 plus $3.50 plus $10, or $22, cost per acre per year to get the feed to the cow barn. On this 80-acre farm two men would be required to milk and feed the 50 or more cows, tend calves, pigs, etc. If they boarded themselves their pay would amount to at least $55 a month, or $1,320 for both per year, which is $16.50 an acre. A third man might be needed the year round which would add $6.60 more per acre.

These are some of the items that need to be considered. And one should not forget to count interest on value of land, livestock and anything else in which money is invested (except irrigating plant which has already been considered). I will not attempt to go more into detail for no two men do things just alike. Moreover, not knowing the working conditions on the ranch I am speaking at random. If the subscriber is to do much of the labor himself he will draw some of the pay roll money and thus alter some labor items. If the milk is to be retailed instead of cream sold for butter making the gross return would be much greater.

HOG CHOLERA GERMS IN SOIL

Hog cholera germs may live in the soil for months. Lurking on farms where the disease has been present they may reappear at any time unless proper precautions are taken.

This is shown by the experiments of a Wisconsin farmer who has brought his case to the attention of the officials of the agricultural experiment station at Madison. Some time ago, after losing a number of valuable hogs from cholera, he changed the location of his swine barns and yards and later raised a fine bunch of healthy pigs.

Naturally he thought that the cholera jinx had left him, but recently it reappeared in his herd. The fact that he has not pastured his herd upon the same ground which pastured cholera-sick hogs has not prevented the reappearance of this dread disease. Much of the entire premises may have been infected at that time.

The veterinarians recommended that all hogs, the temperature of which were not already above normal, be immediately given the proper serum treatment—the one remedy by which a herd can be saved from total extinction

Feeding Roots: More and Better Milk—Beef Mutton

ALL animals improve in condition and increase their product of flesh, milk, wool, etc., by being fed liberal rations of cut roots. No matter what else you feed, cut roots will improve the ration. They add a zest which means increased consumption of roughage and aid in digestion and assimilation. They put a top finish on market sheep and lambs. They put color and richness in milk and cream and resulting butter.

Banner Root Cutters

for both hand and power, prepare roots in the best possible way. Cut so fine as to prevent all choking of animals. It's done with the **"Non-Choke Curve Cut."** Made in seven sizes. Write for free illustrated booklet. Every animal condition will be improved by feeding a ration of cut roots.

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The Jersey

comes into maturity early, is long-lived and is often found making records even to advanced age. She stands above all other breeds for *economic production.* Shall we mail you free a good book on the Jersey?

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Water-proof, Rust-proof, Rot-proof. Warm in winter, cool in summer. Weight about the same as an all-leather work shoe. Will outwear several pairs of leather, rubber or wood soled shoes. No metal touches you. Thick felt insole. Comfortable to wear. Keep the feet in good condition. Best by test for all work in any weather. MONEY BACK if shoes do not meet with your approval. Write for FREE booklet which shows styles, gives prices and tells how to order. A postal brings it.

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YOU can't afford to take any chances when buying a cream separator.

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It is vitally important that you get a machine which will save all of your cream instead of losing enough in a year to amount to more than its cost.

We know that if you see and try a De Laval, the chances are ten to one you will buy it. It's its own best salesman.

Any De Laval agent will be glad to set a machine up for you on your own place on trial, and if you want to keep it and it isn't convenient to pay for it now, we have an arrangement with our agents whereby you can buy it on easy terms so that it will actually save its cost while you are paying for it.

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and not a runt in the bunch

Blatchford's *Pig* Meal

the complete milk-equal, keeps the pigs growing sturdily, surely and safely while weaning. It takes the place of the sow's milk and costs you less than half the value of skim milk. 100 pounds makes 100 gallons.

Ask for our folder, "The Safety Route from *Pighood* to *Porkage*"

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HOLSTEIN CATTLE

A man in New York State owns two ten-year old purebred registered Holstein cows that have recently made fine records. In seven days one gave 571 pounds of milk (average fat test of 4.44 per cent.) making 31.6 pounds of butter; in thirty days she gave 2,460.4 pounds of milk (average test 4.21 per cent. fat) making 129.46 pounds of butter. The other made over 29 pounds of butter in seven days and 117.17 pounds in thirty days.

Holstein-Friesian Cows milk earlier, longer, more per year and more per life than any other breed.

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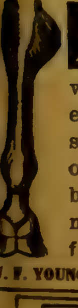
BOG SPAVIN, PUFF or THOROUGH-PIN, but



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TRADE MARK REG.U.S.PAT. OFF.

will clean them off permanently, and you work the horse same time. Does not blister or remove the hair. $2.00 per bottle, delivered. Will tell you more if you write. Book 4 K free.

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When writing advertisers, mention the Cultivator.

when cholera appears. They also urged the farmer to carefully clean up the barns and pens, burning the carcasses of all dead hogs and all litter which might be infested with the disease. Then, to prevent the recurrence of the malady which might be caused by lurking germs or introduced in the feed or by the purchase of stock, they advised him to maintain a cholera immune herd, thus doing away with the likelihood of future losses

CALIFORNIA GUERNSEY CLUB

Guernsey cattle breeders of California have formed themselves into an organization for the mutual benefit of themselves and the breed in the state. At the recent state fair initial steps were taken and a committee was named to draft a form of organization to report the same at a meeting to be held at Modesto on October 17. This meeting took place as scheduled and after hearing the report of the committee the constitution and by-laws, as drafted by the committee, the same was adopted. The following officers were then elected: President, Wm. H. Saylor, San Francisco; vice-president, C. S. Rasmussen, Loleta; secretary-treasurer, D. O. Brandt, Owensmouth. Three members to serve with the president and secretary as executive committee will be appointed in the near future.

The California Guernsey Club invites all persons interested in the breed to join the club and has provided that those who join will become life members by paying a comparatively small fee. There are now in the state quite a number of enthusiastic breeders and admirers of the Guernsey and the officers hope to build a strong body out of this material in time to participate in the big "doings" in Guernseys, and other breeds of livestock as well, at the big exposition in 1915.

HORSE TALK

Don't cut the mane of a work horse. The long hairs are a protection to the top of the neck.

If the mane is cut the collar presses on the stubby hairs and causes irritation and sores.

Keep the collars clean. Keep the neck clean, and the long hairs of the mane well brushed and free from tangles.

When putting on the collar, part the mane carefully.

The collar should fit so perfectly that there is little wear or friction on the top of the neck.

Each horse should wear his own collar, fitted by a person with common sense.

The horse with a sloping shoulder cannot work with any ease or profit in a collar made for an upright shoulder.

The colt that is kept fat from his babyhood will make an easy-keeping horse.

The young colt should be taught to eat oats with his dam as early as possible.

The grain should be fed all along. a small quantity daily when on pasture, and in winter with less hay.

Colts handled and fed in this way make better horses with more bottom.

With this kind of care and feeding, style is developed with the growth, and the value of the young horse is proportionately increased.

Bring the colts to the stables during the day while the flies are so vicious.

Put them in the pasture at night.

The wear and tear in fighting flies is a senseless loss.

A lump of sugar, or an apple given them, will soon teach them to come at the call.

Call each one by his name. This early education goes a long way in making a valuable and trusty horse.—Farm Journal.

MORE AND BETTER HOGS

The California Swine Breeders' Association is just mailing to its members a 30-page booklet on "More and Better Hogs in California." It contains a constitution and by-laws, and a list of officers and directors of the association and a series of articles by various members. These articles are short and crisp and make excellent reading. Still better, we believe they make for more and better hogs. Just at the present moment hogs are going down in price but long before Cali-

200 ACRE FIELD AFTER CUTTING—SOWED 2 LBS. SEED PER ACRE—HARVESTED 1½ TONS CURED HAY TO ACRE

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Cheap, Good, Sure Feed for Your Stock

Whether it's for beef or milk—for work or driving animals—you'll find no feed can equal *Sudan Grass.* Stock find it particularly palatable, preferring it to other forage. It exceeds timothy in nutritive value—is more satisfactory than sorghum or millet. Is easily cured and handled, making the finest hay when baled and stored,—or splendid ensilage.

In the short time since its introduction into this country by the Department of Agriculture its wonderful properties have placed it at the head of all forage crops. "There is no better grass in the world for conditioning work animals or milk production than Sudan," says Mr. B. Youngblood, Director Texas Experiment Stations.

It produces feed in abundance wherever grown, with or without rain. Is a marvellous drouth resistant—thrives in spite of excessive moisture. In dry and semi-arid districts of the South and South-west where other feeds can not be raised it yields heavy crops.

Four pounds of seed will sow an acre that will return 400 pounds seed and from one to two tons of hay the first cutting. Grows again immediately from the stubble—good for two, three or four more cuttings each season—a ton to a ton and a half per cutting. It can not become a pest—strictly an annual—causes no trouble through infesting the land like Johnson grass.

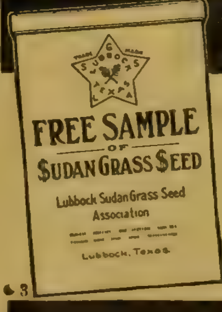
Read the following statement made by Mr. B. Youngblood:—
"We took special pains to organize a local experiment association at Lubbock, and have a considerable acreage planted there, as we felt that the Texas Plains country would be one of the best seed producing centers in the United States."

Lubbock Association Grass Seed is absolutely pure, genuine and thoroughly reliable. It has been grown under the supervision of Texas Sub-station No. 8, located in Lubbock County, V. L. Cory, Supt., and every field has been officially inspected, certified and passed before harvesting.

WARNING—We are the only authorized agents for selling LUBBOCK ASSOCIATION GUARANTEED SEED. Be sure that all seed you buy has our name and trademark stamped on the bag. None other is genuine. This is the only way you can get protection from adulterated seed and insure a profitable harvest.

Put up in 1-2-5-10-25-50 and 100 lb. packages. Retail prices delivered:

1–10 lbs.	$1.00 per lb.
11–25 "	.95 " "
26–50 "	.90 " "
Excess of 50 lbs.	.85 " "



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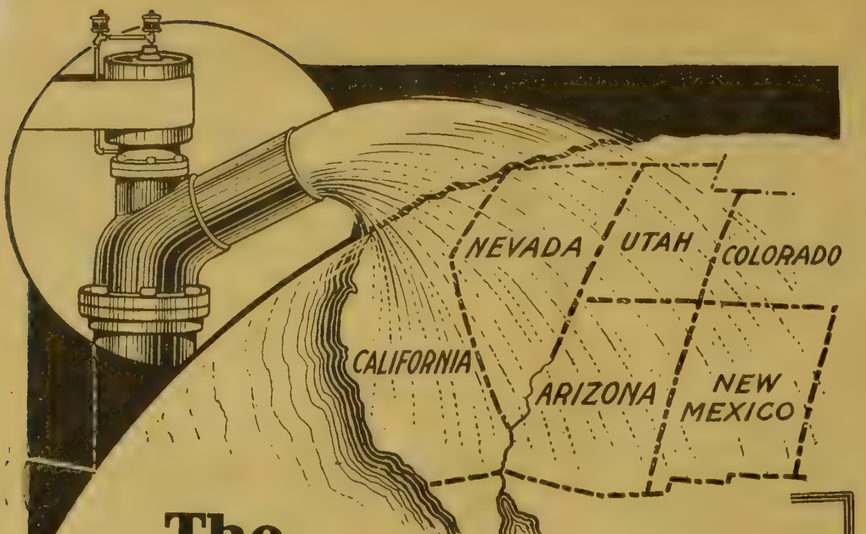

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65——65
Registered Holsteins

ARE THESE SIRES GOOD ENOUGH?

SEGIS OAK HOMESTEAD FOBES, a splendid sire from a leading Wisconsin Herd. Sire of One A. R. O. Daughter, who as a 2 yr. old made 12.99 lbs. Butter—350 lbs. Milk in 7 days. He is a son of Judge Beets Segis, (7A. R. O. Daughters) son of King Segis, (86 A. R. O. Daughters—7 over 30 lbs. each) the first Holstein sire to sell for $10,000 and sire of more Junior 2 yr. old 20 lb. Daughters than any other one sire; the Greatest sire of his generation. His dam is the $800 Oak De Kol 2d Fobes, 22.72 lbs. Butter, 530.4 lbs. Milk in 7 days, a daughter of Fobes Tritomia Mutual De Kol, (30 A. R. O. Daughters, including Lady Oak Fobes De Kol, 36.44 lbs. Butter in 7 days, 991.50 lbs. Butter in 1 yr.) son of Mooie Mutual De Kol, 35 A. R. O. Daughters. Her dam, Oak De Kol 2d, has a record of 29.55 lbs. Butter in 7 days, 100.97 lbs. Butter in 30 days, a daughter of Homestead Jr. De Kol, (69 A. R. O. Daughters, including Grace Fayne 2d Homestead, 35.55 lbs. Butter in 7 days) and from a 31.54 lb. daughter of De Kol Burke, (72 A. R. O. Daughters—7 over 30 lbs. each—including Riverside Sadie De Kol Burke, WORLD'S CHAMPION MILK COW, 920 lbs. Milk in 7 days, 54,808.2 lbs. Milk in 2 years. His 7 nearest dams have average 7 daye BBtter Records of 27.6 lbs. each. His 7 nearest sires have 301 A. R. O. Daughters—14 over 30 lbs. each. SEGIS OAK HOMESTEAD FOBES and 9 of his Sons and Daughters will be offered in this Sale.

JUDGE HENGERVELD PAUL WAYNE, a coming young sire from a Leading Pennsylvania Herd. Son of the $2500 Judge Hengerveld De Kol, (12 A. R. O. Daughters—one over 30 lbs.), considered the best son of the famous Hengerveld De Kol, (116 A. R. O. Daughters—8 over 30 lbs. each, 79 over 20 lbs. each—including Pontiac Jewel 992.11 lbs. Butter in 1 yr.; Pontiac Pleione, 925.56 lbs. Butter in 346 days. Johanna Vernon De Kol, the dam of Judge Hengerveld De Kol, sold for $1300. She has a record of 28.60 lbs. Butter in 7 days, 113.45 lbs. Butter in 30 days, and is a daughter of Johanna Rue 3d's Lad, (47 A. R. O. Daughters—3 over 30 lbs. each, including Belle Netherland Johanna, 1103.83 lbs. Butter in 1 yr.), and is from Susie Vernon De Kol, a 21.91 lb. daughter of Homestead Vernon De Kol, 13A. R. O. Daughters. His dam is a double granddaughter, making her equal to a daughter of De Kol 2d's Paul De Kol No. 6, (13 A. R. O. Daughters, son of De Kol 2d's Paul De Kol, 45 A. R. O. Daughters—including Aaggie Cornucopia Pauline, who sold for $6000 and whose record is 34.32 lbs. Butter in 7 days—137.62 lbs. Butter in 30 days—WORLD'S RECORD when made. This extraordinary young sire, JUDGE HENGERVELD PAUL WAYNE, will be offered as a Special Attraction. One of his half brothers when 4 weeks old sold for $665, and another half brother when one year old sold for $1675. Several other sires carrying the Blood that has produced WORLD'S CHAMPIONS, and from splendid dams—many with A. R. O. Records and ALL from GREAT MILK AND BUTTER ancestry will be offered in this Sale. Sires Bred like these will transmit to their Offspring great Milk and Butter Production.

WRITE AT ONCE FOR SALE CATALOGUE AND READ ALL ABOUT THEM

Geo. A. Smith, Corcoran, Cal.

fornia is raising as many hogs as she ought to supply her own markets they may be still higher. With cheap alfalfa and feeds of all kinds much lower than in former years it is certainly a misfortune to send perfectly good money over the Rockies for stock which could better be raised on the Pacific Slope. May the California Swine Breeders' Association have length given to its arm in its work of drawing to it more and more swine breeders.

Answers in this column by Dr. Wm Petrie, 2714 South Harvard Blvd., Los Angeles, are without charge. For immediate mail answer remit $1.00. In writing questions give full symptoms or particulars of injury of animal.

Warbles

In your issue of July 17, 1913, Page 64, appears an article entitled "An Insect Injuring Cattle." In explaining the habits of this warble fly there does not appear any suggestion as to the possibility of preventing or controling its attacks on cattle. I have a young cow, recently fresh, that has a few of these insects just beginning to pass out through the skin on her back, and I will be glad if you will publish an article explaining the manner of treatment for this pest.—Subscriber, Phoenix, Ariz.

It is very seldom that warbles are found in the backs of cattle at this time of the year. The fly deposits its eggs during July, August and September, and the grubs appear under the skin about the middle of the winter. When the warm weather comes in spring they fall to the ground. Sometimes they do seem to stay beyond their regular time. About the best way to keep the fly from depositing eggs on cattle is to apply some good fly repellant. Two gallons fish oil, one gallon oil of tar and two ounces of crude carbolic acid, well mixed, makes a good one. This can be applied with a spray or it may be rubbed on with a cloth. It should be applied two or three times a week. When the warbles do appear under the skin they should be removed by placing the ends of your thumbs on each side of the bunch and pressing down. This will cause the warble to pop out and the sack that it was in will take care of itself.

Bloody Milk

The milk in half the udder of one of my cows is thick and of a dark brown color when we first begin to milk, but after milking part it clears up and seems all right. She has no fever and we do not think has been hurt. We also have a three-year-old heifer that shows some blood in the milk when stripping. What is wrong?—Subscriber, Patterson.

Bloody milk may be caused by an injury or from too rich food. In either case the udder should be handled very carefully when milking and the cow should be milked oftener than twice a day if possible. Reduce the grain and feed some green corn fodder or alfalfa. Also give the following: Mix three pounds of epsom salts, one pound of common salt, four ounces of bicarbonate of soda and two ounces of nux vomica. Divide this into eight powders and give one every night.

Worms

Will you please tell treatment of hogs for worms?—Subscriber, Santee.

Give a teaspoon of powdered areca nut in some sweet milk every morning for a week. The reason for giving it in the morning is because the stomach is empty then and the medicine will reach more of the worms. Reduce the dose if the hogs weigh less than 100 pounds each.

Skin Disease in Cattle

I have a fine Jersey heifer, fresh one month, that has an affection of the skin that takes the form of small dry pimples under the hair, only no-

(Continued on Page 474.)

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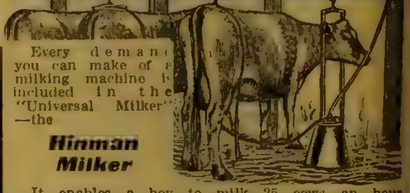

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Poultry for Profit

POULTRY PROBLEMS AND THEIR SOLUTION

SO MANY poultry queries have come in for answer that it has been decided to turn over the whole poultry department this week to questions and answers. Here you will find Mrs. Koethen's solution of your neighbor's poultry problem which may be yours tomorrow. Be sure to keep this issue where you can easily find it when your own poultry problem presents itself. If it is not solved on this page, write it down and send to the Cultivator, and Mrs. Koethen will tell you what to do.

Fireless Brooder

Please give dimensions and directions for building fireless brooder.—S., Pomona.

To make the Philo fireless brooder, which is the type generally used, take a box 14 to 18 inches square and about six inches high, and cut a door in one side. The box must be of rather heavy boards and perfectly tight. By tacking pieces of thin wood each side of the door you can make a groove to run the door in so that the brooder can be closed when the chicks are inside.

In each corner of the box nail a peg four inches high and about an inch square. This is to rest the quilt frame on. For this frame use lath or strips of light wood, making it a little smaller than the box so that it will rest on the pegs in the corners and still leave space next the sides of the box for air. The air which comes through this crack is all the chicks get at first, so see to it that the frame does not fit tightly inside the box. Tack a square of outing flannel to this frame, letting it sag in the middle so low that it will rest on the backs of the chicks.

Now you are ready for the quilt, which is made of cotton batting and cheesecloth, neatly tacked as you would tack any comfort. This should be so large that it will sag down into the middle on the outing flannel and yet reach to the ventilation space outside the frame. It is a good plan to make two such quilts so that one may be added when nights are cold. On very cold nights you may need to lay a burlap sack above the quilts, but never cover the crack that has been left for ventilation.

A box 14 inches square will hold 25 chicks. One 18 inches square will hold 35 at first, but they will have to be divided by the time they are two weeks old. It will hold 25 chicks for a month. Never let them crowd it.—J. A. K.

Mash for Poultry

Please give good formula for mash for producing eggs. What is the best way of feeding grain? Give a formula for a full day's rations for egg producer for 1500 hens. What do you think of steamed barley?—Subscriber, Sebastopol.

The "Association mash," which is generally used by poultrymen around Los Angeles, is as good as any. It consists in winter of 600 pounds bran, 400 pounds ground barley, 300 pounds shorts or middlings, 100 pounds alfalfa meal, 100 pounds feed corn meal, 150 pounds kafir meal, 150 pounds beef scrap, 150 pounds fish scrap, 50 pounds fine ground bone, 10 pounds salt. This is calculated for a ton of mash. This dry mash is kept before the hens in hoppers, and the grain mixture, which is varied at different seasons or in accordance with the price of different grains, is fed in deep litter at night. Some poultrymen feed a light feed of grain in the litter in the morning and a heavier feed at night. Some feed all the grain at once late in the afternoon. Some feed a single grain in the morning and a mixture at night. It does not matter just how it is done, provided the hens get all they want, and always provided they get a good feed of green stuff, alfalfa, lettuce, kale, chard, or sprouted grain, if you have nothing better, in the middle of the day.

If the above mash seems too complicated, try the following: six quarts bran, one quart corn meal, one quart middlings, one quart ground barley, one quart alfalfa meal, one quart beef scrap, one quart linseed or soy bean meal or fish scrap, one-half quart coarse bone meal.

California poultrymen are feeding a good deal of barley this year. The best method of preparing it is to soak the whole barley 12 hours or longer, then pour it into a box with a crack in the bottom, so that the water can drain off, cover with a sack and let it stand till the tiny white roots begin to show. The longer it is soaked, the shorter the time required for sprouting. This may be used for the morning grain feed, and wheat, or wheat and oats, or wheat and kafir corn, or wheat with a little whole corn, if your hens are Leghorns, fed at night. Some poultrymen feed the barley, mixed with wheat and corn, as soon as it has drained 24 hours, without waiting for it to sprout.

I formerly used a good deal of steamed barley, but I like the whole barley, sprouted, better. One reason for this is that there is less waste; another, that the hens seem to like it better; and my third reason is that it

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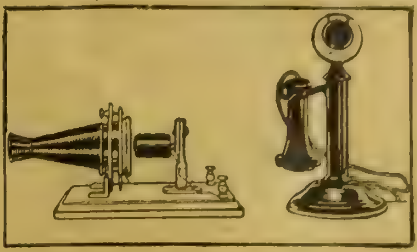

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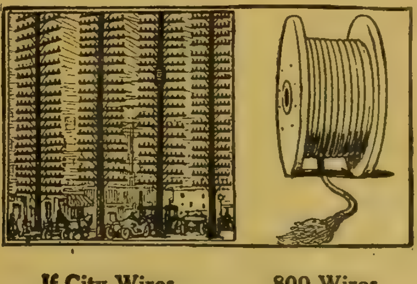
Early Telephone Exchange

Typical Present-day Exchange



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These are some of the familiar improvements. They have saved tens of millions of dollars.

But those which have had the most radical effect, resulting in the largest economies and putting the telephone within everyone's reach, are too technical to describe here. And their value can no more be estimated than can the value of the invention of the automobile.

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is difficult, when barley is steamed, to get just the right amount of moisture into it. If too little water is added, the barley is dry and the hens don't like it. It too much is added, it is sloppy and apt to affect the bowels. The steamed barley, when it is just right, moist and not watery, is excellent for young stock and a nice change for the hens once in a while.

It is difficulut to say just what a full day's rations for 1500 hens should be. Different breeds require less or more and hens eat more when they are laying than when they are not. Proffessor Jaffa of the University of California, in Bulletin 164, has calculated several mash formulas on the basis of so much per hen per day. He allows about 10 pounds of dry mash and from nine to 12 pounds of hard grain for 100 hens, which would be about 150 pounds of mash and from 135 to 180 pounds of grain for 1500 hens per day. Professor Dryden of the Oregon station, in Bulletin 157, makes a similar estimate, but allows 100 pounds of mash and 200 pounds of grain for 1500 hens in one day. The Cornell station agrees with Professor Dryden in the proportion of mash to grain feed. Professor Rice says in Circular 90, "Fowls should eat about one-half as much mash by weight as grain. Regulate the proportion of grain and ground feed by giving a light feed of grain in the morning and about all they will consume at the afternoon feeding (in time to find grain before dark). In case of pullets or fowls in heavy laying, restrict both night and morning feeding to induce heavy eating of dry mash, especially in the case of hens".

From the opinions quoted above it is quite plain that there can be no fixed rule as to amount of feed per hen. My own plan, in feeding hard grain in litter, is to try to keep a little in the litter all the time so that the hens may find it if they care to scratch for it. Generally speaking, a handful is enough for one hen at a single feeding.—J. A. K.

Feather Picking

I would like to know how to break chickens from picking feathers from other fowls.—Subscriber, South Pasadena.

Make an ointment of a teaspoon of extract of aloes, well mixed in a cup of lard. Rub this on the feathers about the portion of the bird which has been plucked. One or two doses of these feathers will usually cure the bird that has been picking feathers. Trim off the point of the beak of any bird you know to be guilty of this bad habit, and keep all your hens busy scratching.— J. A. K.

Liver Trouble—Tuberculosis

In past six months I have lost about 30 chickens and hens from a trouble I can do nothing to stop. They will commence to droop, stop eating, keep by themselves away from the flock, sit with head down and mope around for several days and finally die. Have cut open several and their livers seem enlarged and covered with yellowish spots. Sometimes the liver is nearly decayed. Can you tell me the trouble, cause and remedy? They have for feed wheat, barley, alfalfa, milk and occasionally a bran mash and meat.—Subscriber, Lompoc.

Without knowing more about the symptoms it is impossible to say whether these chickens had tuberculosis or liver trouble. The two diseases are much alike in their effect on the liver, and a post mortem by a bacteriologist is the only certain means of distinguishing between them. In general these different symptoms characterize the two diseases: In tuberculosis the comb becomes pale and the bird loses weight, sometimes becoming greatly emaciated. The eye is bright, the appetite good, till near the end. There is likely to be diarrhoea and frequently lameness. A post mortem reveals the liver and often the spleen and intestines covered with whitish or yellowish cheesy nodules. Tuberculosis rarely attacks young chickens, but confines itself to adult fowls.

The first symptom of liver trouble is usually a dark red comb which becomes purplish or even black as the disease progresses. There is watery diarrhoea, lack of appetite, and indisposition to move. A post mortem shows the liver enlarged, conjested with blood or spotted.

You will need to study your birds very carefully to find out which of these diseases is carrying them off. Feel them on the roost at night and if you find that any seem much lighter than they should, put them by themselves as suspects. Look them over by daylight and if you see any with pale combs put them by themselves. Diseases of this sort come on gradually. The birds are ailing a good while before the trouble seems serious.

Your ration is not well balanced, and it may be this is all that ails the chicks. Feeding too much barley is said to cause liver trouble, and a diet of hard grain without a mash of any sort rarely agrees with fowls of any age unless they are on range, and then not for long. Try keeping this dry mash before all your birds all the time: 2 parts (by weight) bran; 1 part middlings; 1 part alfalfa meal; 1 part ground barley or ground oats; 1 part medium coarse beef scrap; ½ part ground bone; a little charcoal. See that girt, shell and fresh, clean water are always before them. For the grain feed use wheat alone or wheat and Kafir corn, and make them scratch for it in deep litter. Give all the green feed they will eat once a day, oftener if you have it.

It would be a good plan to give all your birds a dose of Epsom salts twice a week for a few weeks. Put the salts in a moist mash which may be made by moistening the dry mash with milk, about half a teaspoon for each bird, less if they are not grown. This will cleanse the system. and help to prevent clogging of the liver.

If, after studying your birds carefully, you are convinced that the symptoms point to tuberculosis, remove all suspected birds from the flock; disinfect the houses with cresol disinfectant, the runs with lime, and the troughs and fountains with boiling water, and try in every possible way not to carry infection from the sick birds to the well ones. When you are certain any bird has this dread disease, kill and burn at once. There is no cure.

Cresol disinfectant is made as follows: Shave a ten-cent cake of laundry soap into a pint of water; steep it until a paste is formed, then stir in one pound of commercial cresol, which may be bought from any druggist for about 30 cents. Beat this mixture till the paste is dissolved, then stir in one gallon of kerosene. Apply to the walls and roosts with a brush.—J. A. K.

VETERINARY QUERIES

(Continued from Page 472.)

ticeable by passing the hand over the parts. The heads of the pimples rub off easily taking the hair with them. They are most numerous on the shoulders, neck and upper part of the front legs. There seems to be some swelling under them in the skin. I have used lime and sulphur and now am using zenoleum with only partial success so far. Do you think it is due to the condition of the blood?—Subscriber, Bairdstown.

Wash the parts clean with warm water and soap, removing all the scabs that are loose. When dry anoint the parts with carbolized olive oil which you can procure of your druggist. Also give a physic of epsom salts.

Nasal Gleet

I have a mare with what appears to be a very severe cold in her head. She has difficulty in breathing and snorts and coughs a great deal when eating. There is a discharge from her nostrils and she makes quite a noise in breathing. A local veterinarian locates the trouble in her nostrils and prescribed steaming by sprinkling eucalyptus oil on hot water and allowing her to breath the fumes. It does not yield to this treatment. Can you suggest something that might relieve her?—Subscriber, Buena Park.

It may be nasal gleet, and if it does not extend too far back into the head, into some pocket, the following powders will dry it up: Powdered gentian four ounces, powdered nux vomica two ounces, sulphate of iron four ounces and enough farina to make one pound. Give a tablespoon in the feed morning and evening. If this does not relieve her in two or three weeks then it will probably be necessary to trephine the head, which can only be done by a good veterinarian.

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For Sale—80-acre relinquishment; fine level, rich soil—all under cultivation—well fenced. Good well, fine climate and market: $800 takes it. $400 cash, balance 2 years, 8 per cent. Or will sell 80 acres patented land, unimproved, same place, at $20 per acre, ½ cash, balance 4 years, 8 per cent. This land is in San Luis Obispo County. Plenty rainfall. Wm. T. Mantz, Watts, Cal.

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Nothing but immunized stock sent out. Extra fine lot of fall pigs, both sexes, ready for shipment during December and January. Three herd boars used. All stock crated and registered. Make reservations now. C. B. Cunningham, Mills, Sacramento Co., Cal.

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For Sale—Mammoth White Holland Turkeys. Mature hens and toms. ALSO young stock from five distinct pens, headed by toms from yards of leading breeders of this breed in the state. EGGS IN SEASON. Orders given prompt attention. Prices on application. Address H. McKusick, Box 733, Calexico, Imperial Co., Cal.

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No. 3 flooring, generally graded as No. 2, per M.	**20.00**
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Iron enamel bath tubs, complete with overflow and 4½ Fuller combination. Only	**15.50**
Lavatories	**$3.75**
High closet combination	**$12.00**
Low-down enamel steel combinations, complete to floor, only	**12.50**
Special reductions in kitchen sinks, 20x30 No. 2 and 18x36 No. 2, now	**2.75**
WALL BOARD	
Former price $25; now, per 1000 sq. feet	**$19.00**
Corrugated iron. New stock, per square; now	**$3.75**
Roofing paper; ready to lay; per roll	**$1.00 up**
Guaranteed house paints in all colors; per gallon	**$1.50**
Shingle stain and black graphite roof paint; per gal., 50c; in barrels, per gal.	**40c**
SASH AND DOORS	
Five-panel Colonial doors, all styles	**$1.00**
Four-panel O. G. door	**$1.25**

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French, Imperial and Sugar Prunes, Bartletts, Clings and Freestone Peaches, Plums, Almonds, Apricots, Figs, Apples, Grafted Walnuts, Grafted Resistant Vines, Rooted Table Grapes, Spineless Cactus. Special prices on application.

TABLE GROVE NURSERIES
Healdsburg, Calif.

Orange County's bean crop is all harvested and in sacks ready for shipment. The crop is said to total 500,000 bags, valued at $2,000,000.

Boy Today
Man Tomorrow

The health of the growing boy depends upon the food you give him. See that he drinks Ghirardelli's Ground Chocolate. He'll like it and it will do him lots of good. It is a real health food and drink and costs no more than those beverages that are universally considered to be harmful. Begin serving Ghirardelli's tomorrow. It will please every member of the family.

In hermetically sealed cans.

Ghirardelli's Ground Chocolate is the only original ground chocolate. It has been used in Western homes for over a third of a century and its popularity is growing day by day

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Despite the European war there is no raise in prices.

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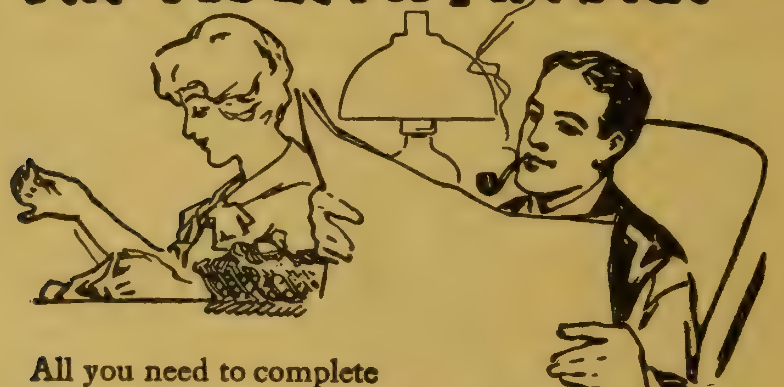
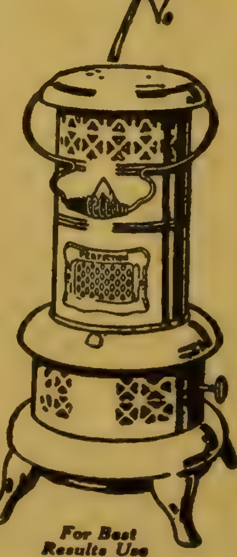
GROUND
CHOCOLATE





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Dealers everywhere

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(CALIFORNIA)
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For Best Results Use Pearl Oil

The Household Department

THE OLD KENTUCKY HOME

By Stephen Foster

The sun shines bright in the old Kentucky Home;
'Tis summer, the darkies are gay;
The corn-top's ripe, and the meadow's in the bloom,
While the birds make music all the day.
The young folks roll on the little cabin floor,
All merry, all happy and bright;
By-'n-by hard times comes a-knocking at the door—
Then my old Kentucky Home, good night!

Weep no more, my Lady,
O weep no more today,
We will sing one song for the old Kentucky Home,
For the Old Kentucky Home, far away.

They hunt no more for the possum and the coon,
On the meadow, the hill and the shore;
They sing no more by the glimmer of the moon,
On the bench by the old cabin door.
The day goes by like a shadow o'er the heart,
With sorrow where all was delight;
The time has come when the darkies have to part—
Then my old Kentucky Home, good night!

The head must bow, and the back will have to bend,
Wherever the darkey may go;
A few more days, and the trouble all will end,
In the field where the sugar-canes grow.
A few more days for to tote the weary load,——
No matter, 'twill never be light;
A few more days till we totter on the road,——
Then my old Kentucky Home, good night!
Weep no more, my Lady,
Oh, weep no more today!
We will sing one song for the old Kentucky Home,
For the old Kentucky Home, far away!

COMMON SUPERSTITIONS OF THE SOUTH

In nearly every human heart there is a trace of superstition; this is more strongly in evidence in the unlearned and ignorant. The Southern darkey possesses this trait in a marked degree.

The screech owl, with its shrill, shivering cry coming around the home of a darkey at night will give him horrors, as he considers this a sure sign of death of some member of the family. You will see the shovel and tongs quickly thrust into the fire, pockets turned inside out, or cuffs turned back, these being the charms supposed to drive the unwelcome intruder away.

"I jes' knowed Sarah Ann's little Julie gwine die," said old Aunt Chole to me on hearing of the death of a little negro girl of the community, "case I hearn dat old screech owl hollerin' round de house several nights while she was sick."

My old nurse would never sweep under the bed in which any one was lying sick, nor would she pour water on the fire in the room of a sick person, as these things are thought to exercise an evil influence over the disease, possibly inducing a fatal termination.

Something bad is surely expected to happen to the person who sees the new moon through the tree tops or over his left shoulder.

A darkey never turns back for something forgotten without first making a cross mark on the ground and spitting on it to prevent bad luck.

In some districts, the darkies have a strange custom of laying a newborn baby on the floor and sweeping around it, thus, as they say, sweeping away all cares and troubles from its future life.

If a rabbit crosses the road in front of a darkey and goes to the right, the darkey proceeds on his way rejoicing, expecting only the best results from his errand or journey; but if the rabbit goes to the left he loses heart, thinking only bad luck will come to him. It is considered especially desirable to be the possessor of the left hind foot of a graveyard rabbit; but no darkey would kill a graveyard rabbit to obtain one.

"Miss Marthy, company's comin' to dinner," said the cook one day, "case I drapped de dish cloth on de floor, and de old red rooster, he flew up on de fence and crow'd three times."

Other signs of company coming are the scissors dropping and sticking up in the floor, or a chunk of wood falling down from the fire. If there is a burning, tingling sensation of the ears, a darkey will tell you that some one is talking of you; if the right ear, they are saying something good of you; if of the left ear, something bad. To stump the toe of the right foot, they think, is a sign that you will be a welcome visitor at the place to which you are going; to stump the toe of the left foot, you will be unwelcome.

If Aunt Chloe finds a pin on the floor with the point toward her, she picks it up with a smile of satisfaction—that is good luck; but if the head of the pin is toward her, she thinks that is bad luck; but she wards off the evil by walking around until the point of the pin is toward her and then picks it up.

Southern cooks always insist on having hog jowl and peas on New Year's Day. This is supposed to insure you against want during the year. There is a couplet commonly quoted:

> "Eat hog jowl and peas
> And live at your ease."

Aunt Chloe always saves the bones of the hog jowl to rub her "jints" "when I has de rheumatiz," she said. "I always rubs wid dem to ease my pains."

Many darkies have a habit of wearing silver dimes in their shoes as a charm to keep away witches and evil spirits.

It is considered bad luck to meet a funeral procession. I have known darkies to turn around and go a mile out of their way rather than meet and pass one.

The negroes have a peculiar superstition that when a person is buried the tools used in digging the grave must not be carried from the cemetery until the day after the burying. They tell you some one in the community will die soon unless the tools are left all night in the cemetery

A negro will never burn the wood of a tree that has been struck by lightning; to do this is thought to bring the worst kind of luck.

The old darkies are strong believers

Cherry Trees

Cherries are the first, the most attractive and the best fruit of the summer season. This, together with the fact that they are very profitable, yielding from $400 to $600 an acre, makes them a good "buy" for any fruit grower in position to raise them.

Our Block includes Bing, Black Oregon, Black Tartarian, Burbank, Royal Ann, and other good varieties on Mahaleb and Mazzard Root. Write Us First.

THE SILVA-BERGTHOLDT CO.
"Fruit Tree Specialists"
P.O. Box A Newcastle, Cal.

in "conjuring," as they call it. A negro woman living near my home came over one day in great distress to tell me that she was being "conjured." She said that every morning when she arose she found something white like flour sprinkled around her house. She had an enemy, she said, who was trying to bring her under an evil spell. So firmly was she convinced of this that she left a good place and moved to another part of the country.

I have seen old darkies whose limbs were drawn with rheumatism, who would tell me with the utmost sincerity that they had snakes, frogs and lizards in their limbs and body—placed there by the "conjurer."

A few years ago there lived on my uncle's plantation a stout, healthy negro girl of about seventeen years of age. Coming in from the field one day and, being warm and tired, she lay down on some planks in the yard and fell asleep. While she was sleeping a negro boy came by and, in a spirit of michief, cut off a lock of her hair and ran out of sight before she was sufficiently aroused to see who it was. Placing her hand upon her head and finding the lock of hair gone, she made a great lamentation and would not be comforted, saying that some one had taken her hair away to "conjure" her. From this time she grew sad and melancholy, lost her appetite, and finally grew sick of fever. In her delirium she would start up wildly and beg some one to bring her hair back to her.

One day, in a conscious interval, she called her mother and said: "Mammy, I'm dying, but if you will jes' git me back that lock of hair I will get well." But her mother did not know who had the hair, so in a few days the poor girl died, a victim of her delusion.

Poor Uncle Solomon Johnson for a number of years had been crippled with rheumatism, and, as he was not able to work, the good things of life were very slow about coming his way. At last he died, and, as is usually the case when a negro dies, all his friends and kindred gathered from near and far to enjoy the "settin' up" and the funeral.

Uncle Sol, had suffered with rheumatism for so long his knees were drawn up, and when he was dressed they found it impossible to straighten them; but, at night, after he was laid out and they were waiting for the coffin, the watchers in that little hillside cabin witnessed a strange sight. Uncle Sol's knees suddenly straightened out and his feet slipped to their proper places. Immediately the superstition in the darkey nature asserted itself.

"Did you see dat?" was asked. "My Lord, what's dat?"

No one waited to answer questions. There was a rush for the door and the little cotton patch around the cabin gave evidence of the haste with which the panic-stricken darkies fled, for the white, fleecy locks were scattered over the field.

The preacher, being a good runner, was a little in advance of the others, but, taking a short cut through the branch, he became entangled in some bamboo vines, and, being in a hurry, he could not extricate himself. Having a dread of being left alone so near the fearful cabin, he endeavored to stay the fleeing darkies. "What you niggers runnin' for?" he asked. "Dere ain't nuffin to be feared of. You all is just de biggest fools I eber seen in my life." It was in vain he called to them. They left him to his fate and tarried not until the doors of their own homes closed upon them.

Superstition is dying out to some extent. Is is not so common as it was a few years ago. Education is doing much to relieve the negro mind of those old foolish superstitions.—Southern Ruralist.

IDEAS FOR THE COOK

Written for the California Cultivator
By Isabel Cottle

Breakfast

Baked Bananas Soft Sugar
Corn Meal Souffle
Fried Liver and Bacon
Coffee

Lunch or Supper

Broiled Ham Drop Biscuit
Creamed Celery
Baked Apple With Cream
Sponge Cake
Tea

(Continued on Page 479)

One of Our Houses

Be Your Own Home builder

Complete houses from $200 up. It's easy with our plans and your hammer. We furnish the lumber, trim, windows, doors, cut and numbered to fit the plans.

Also paint, finish, stain, nails, hardware, plaster or interior wall-board. Follow the plans—you can't go wrong. A substantial, permanent and attractive home results. Not portable. Satisfaction guaranteed. Illustrated catalogue FREE. Write today.

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Largest in the World in Our Line.

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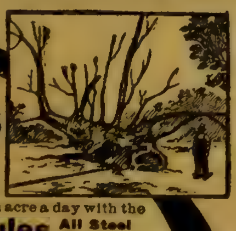

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Hercules Mfg. Co.
1928 23rd St., Centerville, Ia.

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Mayer HONORBILT WORK SHOES

Stand the hardest kind of wear but are not heavy or clumsy. Resisto uppers, double stitched heavy oak tanned soles—solid counters—double leather toes—the greatest leather combination put into work shoes.

WARNING—Always look for the Mayer name and trade mark on the sole. If your dealer cannot supply you, write to us.

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We make Mayer Honorbilt Shoes in all styles for men, women, children; ***Drysox,*** **wet weather shoes;** ***Yerma Cushion Shoes, Martha Washington Comfort Shoes.***

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New—Clean—Stock for the Holidays

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FRUIT **CIGARS** **TOBACCO Etc.**

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with $10 Grocery Order

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Wholesale Grocers
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The Flame of Acetylene Light is Small and the Burner Peculiar

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And that the little gas openings in the arms of the burner are only pin hole size. So small they let out only half of a cubic foot of Acetylene in an hour.

You might leave one of these Acetylene burners open by accident all day—and even then there wouldn't be gas enough in the air of the room to enable you to set fire to it if you tried.

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And the chance of your leaving a burner open that long is not worth considering. The pungent odor of the escaping gas would be certain to attract attention in a few seconds.

Insurance reports say that in a list of 10,000 recent fires and accidents caused by illuminants, 9990 were charged to the misuse and abuse of electricity, kerosene, gasoline and city gas and only ten to the misuse and abuse of Acetylene.

That's why the engineers of the National Insurance Board have endorsed Acetylene. They say it's safer than the oil illuminants it is rapidly displacing.

You should use home made Acetylene yourself to light your house and barns and to cook your meals.

All the facts and figures are in our illustrated catalogue which we send on request. Address

Oxweld Acetylene Company
656 Pacific Electric Bldg.,
Los Angeles, Cal.
Chicago Newark

We Pay Postage

California Strained Honey, Almonds and Walnuts

Pure Strained Honey direct to your table by parcels post—8 lbs. net weight $1.00
3½ lb. Sack Paper Shell Almonds $1.00
4½ lb. Sack Extra Fancy Walnuts $1.00

Postage Paid in Local, 1st, 2nd or 3rd Zones
Ask about Prepaid Holiday Packages for Eastern Friends
PRODUCER - TO - CONSUMER SUPPLY CO., 230½ South Spring St., Los Angeles

PIPE Second Hand
SCREW CASING
Alexander Pipe Company
MAIN OFFICE—254 North Point St., San Francisco
BRANCH OFFICE—1611 E. 6th St., Los Angeles

San Francisco-Los Angeles Produce Markets

Los Angeles Market

LOS ANGELES, Nov. 11, 1914.

BUTTER

Prices to trade 4 cents above following quotations:

Creamery Extras	.31
Firsts	.29
Country	.23

EGGS AND POULTRY

Prices to trade, 3 cents higher than following quotations:

Fresh ranch, case counts	.40
Candled	43@44
Northern Case Count	.51½
Petaluma-Santa Rosa	.52½

Prices to producers:

Hens, lb.	15@18
Roosters, old	.9
Broilers, lb.	.24
Fryers	.20
Roasters, lb.	.15
Turkeys	18@20
Ducks	.17
Geese	.14
Squabs, doz.	2.00

LIVE STOCK

The following quotations are f. o. b. Los Angeles on all stock:

Hogs, 175 to 200 lbs., per cwt	**8.00**
Prime Steers	**7¼@7½**
Heifers	6¼@6½
Calves, lb.	8½@9
Sheep—	
Ewes, head	4.50
Wethers	4.50@5.00
Lambs, head	4.50@4.75

POTATOES

Wholesale selling price:

Idaho	1.20@1.25
Sweets, lug	.60@75
Northern Burbanks, cwt	**1.20@1.30**
Salinas	1.90@2.00
Shimas	1.30@1.40
Lompocs	1.90@2.00

ONIONS

Wholesale selling price:

Australian Brown, cwt	85@95
Silverskins, cwt	1.85@2.00
Yellow Danvers	.85@95
White Globes	1.95@2.10
Garlic	.16@17

VEGETABLES

Wholesale selling price:

Artichokes, Northern, doz	.50@90
Beets, doz.	**30@35**
Beans, String	.6@8
Lima	.5@6
Cabbage	.65@75
Carrots, doz.	.30@35
Cauliflower, doz.	.40@45
Celery, crate	1.75@2.35
Corn, Sugar, box	.60@65
Cucumbers, lug	.45@55
Egg Plant	.3@4
Escarole, doz.	.40
Horseradish, lb.	.15@16
Leeks, doz.	.35@40
Lettuce, crate	.85@1.00
Mint, doz.	.35@40
Okra, lb.	.6@7
Onions, Green, doz. bunches	.15@20
Oyster Plant	.30@35
Parsnips, doz.	.25@30
Peas, lb.	.6@7
Peppers—	
Bell, lb.	.4@5
Chili, lb.	.3@4
Pumpkins, lb.	1½@2
Radish, doz.	.20@30
Rhubarb, box	.80@85
Spinach, doz.	.20
Squash—	
Summer, lug	**30@35**
Crookneck	**30@40**
Hubbard, lb.	**1½@2**
Turnips	.30@35
Tomatoes, lug	.40@50

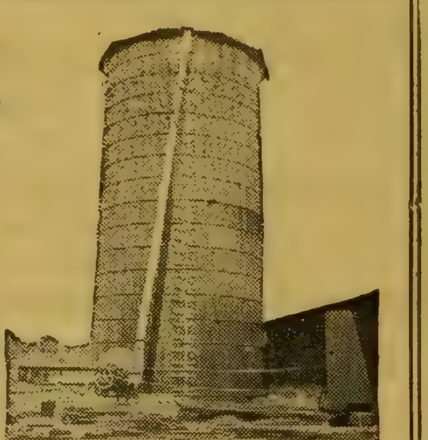
FRESH FRUIT

Wholesale selling price:

Apples—	
Bellflowers	.70@90
Jonathans	1.25@1.35
Spitzenbergs	1.25@1.35
Rome Beauties	1.35@1.50
King Davids	**1.25@1.35**
Pearmains	1.35@1.45
Bananas	3½@4
Berries—	
Strawberries, basket	.7@9
Blackberries, basket	.5@6
Casabas, doz.	1.35@1.75
Cranberries, bbl.	7.35@8.50
Figs, box	1.35@1.50
Grapes—	
Black Moroccos	1.10@1.25
Cornichon	1.10@1.25
Malagas, crate	**1.00@1.20**
Muscatels, lug	**1.10@1.25**
Tokays, lug	1.35@1.50
Red Emperor	1.35@1.50
Guavas, basket	**3@4**
Pears,	
Seckel, box	1.30
Winter Nelis, packed	2.25
Flemish Beauty	1.85
Persimmons, lb.	**3@7**
Pineapples, lb.	**6@6½**
Pomegranates, box	1.25@1.50
Watermelons, lb.	**1½@2**

SILOS

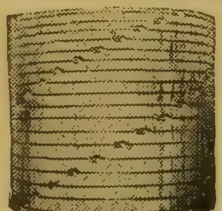
All sizes and dimensions made to order for your particular conditions.



This is a Photo of the 20x40 Redwood Stave Silo Manufactured and erected by us on the Sheldon ranch, Kenwood, California.

TANKS

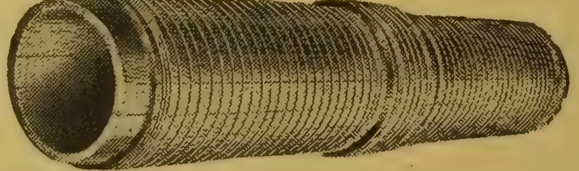
From 500 to 500,000 gallons capacity.



Built to suit All Uses and Users. Cheaper than Metal Tanks, last 10 times as long.

PIPE

Machine Banded or Continuous Stave. For Water Supply, Irrigation or Power.



All Designed by our expert engineers. Made in our own immense factory from clear, air-dried redwood, selected from Air-Dried Stock of 40 Million Feet, which we carry at our plant at ALL times. Write Us for Prices.

Redwood Manufacturers Co.

Fully Paid Capital, $1,000,000.00

804 KOHL BUILDING SAN FRANCISCO

A. F. GEORGE CO.

265 So. Los Angeles St., Los Angeles, Cal.

— AGENTS FOR —

THE YUBA BALL TREAD TRACTOR

See Yuba Tractor Advertisement on Back Page of Cover.

CITRUS FRUIT

Wholesale selling price:

Lemons	2.50@3.50
Grapefruit, Seedless	2.50@2.75
Valencias	2.00@3.00
Limes, basket	1.00@1.25

DRIED FRUITS

Wholesale prices to retailers are:

Evaporated Apples, Fancy., lb.	
boxes	6¼@7½
Apricots	8½@10
Nectarines	**12½**
Peaches	5½@6
Pears	**8@12**
Prunes	**5¾@17**
Plums	**10**

HAY

Buying prices f. o. b. cars Los Angeles:

Barley	10.00@11.00
Wheat Hay	10.00@11.00
Tame Oat	11.00@13.00
Alfalfa	9.00@11.00

GRAIN

Wholesale selling prices f. o. b. Los Angeles:

Corn, Yellow	**2.20**
Corn, White	**2.30**
Wheat	**2.15**
Oats, Red	**1.85**
Oats, White	**1.65**
Kaffir Corn	1.90
Millet	3.75
Popcorn	4.75@5.00
Egyptian Corn	2.05
Barley Seed	1.45
Milo Maize	2.00
Cal. Seed Oats	2.25
Sunflower Seed	5.25@5.35

FEED STUFF

Wholesale selling prices f. o. b. Los Angeles:

Bran, Heavy	**1.55**
Altalfa Meal	1.05
Alfalfa Syrup, per cwt.	1.05
Beef Scraps	**3.00@3.10**
Beet Pulp	1.25
Cracked Corn, cwt	**2.25**
Cracked Wheat, cwt	**2.30**
Cotton Seed Meal	**1.85**
Bloodmeal	**3.60@3.70**
Bone Meal	2.00
Meat Meal	3.00
Sun Flower Seed	**6.00@6.10**
Bone Green	**1.95@2.05**
Charcoal	**1.90@2.00**
Oil Cake Meal	**2.05**
Fish Meal	**3.15@3.25**
Rolled Oats	1.90
Rolled Barley	**1.35**
Middlings	1.85
Feed Meal	**2.30**
Oat and Wheat Middlings	**1.60**

San Francisco Market

SAN FRANCISCO, Nov. 10, 1914.

BUTTER

Prices to trade, 4 cents above following quotations:

Extras	.30
Prime Firsts	.28
Firsts	.26
Seconds	.24

EGGS AND POULTRY

Prices to trade 3 cents higher than following quotations:

Extras	.51
Select Pullets	.37½
Storage Extras	.28

LIVE STOCK

San Francisco prices, gross weight:

Steers	.4@7
Cows and Heifers	**3@6¼**
Calves, lb., live weight	**6@9½**
Hogs	.5@7½
Wethers	5½@6
Ewes	.5@5½
Milk Lambs	.7@7½

VEGETABLES

Wholesale selling price:

Beans—	
Wax	.2@3½
Strings	.2@3½
Limas, lb.	.3@4½
Brussels Sprouts, lb.	.2@3½
Cabbage, cwt.	**1.00@1.25**
Carrots, sack	.30@40
Celery, doz.	.20@25
Corn, Green, sack	1.75@2.00
Cucumbers, lug	.30@55
Egg Plant, lug	.25@60
Peppers—	
Bell, lug	**35@40**
Chili, lug	**40@50**
Rhubarb, box	[illegible]
Tomatoes, lug	.15@35

FRESH FRUIT

Apples—	
Bellflowers	**40@65**
Spitzenbergs	**50@90**
Jonathan	**40@75**
White Winter Pearmains	.50@65
Crabapples	**25@50**
Newtown Pippins	**50@90**
Bananas, Hawaiian, bunch	1.25@2.00
Cranberries, bbl.	8.00@8.25
Figs—	
Black, double layer	1.00@1.15
Black	.50@75
Grapes—Crates	
Black	.50@75
Cornichon	.50@75
Tokay	.40@50
Seedless	1.25@1.50
Malagas	.75@1.00
Muscats, lug	1.00@1.50
Huckleberries	.5@7
Pears—	
Winter Nelis, wrapped, box	1.25@1.50
Other varieties	**35@75**
Pomegranates, box	**50@1.00**
Pineapples	2.50@3.25
Persimmons	.50@80
Prunes, crate	**60@1.00**
Quinces, box	.25@40

DRIED FRUITS

Wholesale prices are:

PRUNES—1914 crop, bulk basis: 30-40s, 6c; 40-50s, 5c; 50-60s, 5c; 60-70s, 5¼c; 70-80s, 5¼c; 80-90s, 5c; 90-100s, 5c. 1913 crop worth practically same prices. The above are for both Santa Clara prunes and stock from outside sections.

Other Fruits, 50-lb. boxes —	Standard	Ch.	Extra Ch.	Fcy.
Evaporated apples		4¾c	5 c	5¾c
Apricots	7½c	8 c	8½c	10 c
Peaches	3½c	4 c	4¼c	5½c
Pears	7 c	8 c	9 c	10 c

RAISINS

RAISINS—The following prices are f. o. b. Fresno, as given out by the Associated Raisin Company for November shipments and are guaranteed against a decline till December 31st: Fancy seeded, 16-oz., 7c; 12-oz., 5¾c; bulk, 6c; choice seeded, 16-oz., 6¾c; 12-oz., 5½c; Thompson seedless, No. 1, 16-oz. pkgs., 7⅜c; 12-oz., 6c; 50-lb. cases, 6¼c; loose Muscatels, 1-crown, 5½c; 2-crown, 5½c; 3-crown, 5¾c; 4-crown, 6c; Sultanas, 50-lb. cases, 6½c; bulk, layers, 50-lb. bxs., $2.75; in 20-lb. bxs., 6-crown, $2.75; 5-crown, $2.25; 4-crown, $1.60; 3-crown, 5-lb. bxs., on all bulk stock, 50c additional; 10-lb. bxs., 25c additional. Cartons—Clusters, 20 to a case, No. 1, $1.70; No. 2, $2.10; No. 5, 4 to a case, $2.25. Local representatives of the association are asking about ¼c higher, while several of the largest packers are quoting ½c under these figures.

BEANS

Wholesale selling price:

Limas	5.15@5.25
Lady Washington	3.60@3.75
Pink	3.25@3.50
Black Eyes	4.10@4.30
Cranberry	3.80@4.00
Small White	4.30@4.50
Garbanzos	5.50@6.00
Large White	4.10@4.20
Bayou	4.60@4.85
Manchurian Speckled Bayous	3.50@3.75
Manchurian Butters	3.90@4.10
Manchurian Cranberry	4.00@4.25
Bayous, California	3.50@3.75
Red Mexican	5.00@5.25
Red Kidney	3.50
Horse Beans	3.00@4.00
Bayou, Mexican	4.00@4.25

HOPS

1914

Sacramento Valley	.8@10
Sonoma-Mendocino	9½@11
Oregon Clusters	9½@10

HAY

We quote the average wholesale prices on carload lots on today's market as follows:

Fancy Wheat Hay, lt. bales	12.00@13.00
No. 1 Wheat or Wheat and Oat	9.00@11.00
No. 2 Wheat or Wheat and Oat	6.00@8.50
Choice Tame Oat	10.50@12.00
Wheat, Cal. Club	1.95@2.00
Barley	5.00@7.50
Wild Oat	**5.00@7.00**
Alfalfa	6.00@9.00
Stock Hay	**4.50@5.00**
Straw	.30@45

GRAIN

Wheat, Cal. Club	1.87½@1.90
Corn, Eastern Yellow, blk	1.75@1.76¼
Corn, Egyptian White	142½@1.45
Barley, Feed	1.20@1.22½
Oats, White	1.55@1.60
Oats, Red, Feed	1.35@1.45
Millet	.3@3¼
Flax	**5@5¼**
Rye	**1.50@1.60**
Sunflower	.5@5½

FEED STUFF

Alfalfa Meal, car lots	**12.50@13.50**
Bran, ton	25.00@26.00
Feed Cornmeal, ton	**40.00@41.00**
Cracked Corn	**40.00@41.00**
Rolled Barley, ton	**24.00@25.00**
Rolled Oats, ton	**37.00@37.50**
Middlings	31.00@32.00
Shorts	26.00@27.00
Oilcake Meal	32.00@33.50
Cocoanut Oilcake Meal	23.00@24.00

Citrus Fruit Market

LOS ANGELES, Nov. 11, 1914.

Valencias are selling very satisfactorily. Shipments have all been made, and in face of the fact that the eastern markets are filled with quantities of Florida fruit which is selling anywhere from $1.48 to $2.00, our Valencias are commanding big prices. At the prices mentioned for the Florida fruit there is practically nothing to be turned over to the grower. Early navels from this state will be held until they can stand the test. But it is probable that within the next week or two shipping will be quite lively. Lemons are commanding good prices, but the market is without features.

Shipments

Shipments of oranges to date from Southern California since November 1, 184 cars, lemons 79, total 263. To same date last season, oranges 7 cars, lemons 12, total 19. To same date, two years ago, oranges 168 cars, lemons 89, total 257. From Tulare County, Nov. 7-8, oranges 6 cars, lemons 5, total 11. From Butte County, Nov. 7-8, oranges 1 car.

IDEAS FOR THE COOK

(Continued from Page 477.)

Dinner

Filet of Fish Creamed Potatoes
Cauliflower, Butter Sauce
Bellevue Salad
Almond Cream Cake Coffee

Corn Meal Souffle

Cook three-fourths of a cup of corn meal in one pint of hot milk until thickened, add salt and remove from fire; then beat in singly yolks of four eggs, adding lastly the stiffly beaten whites. Bake in moderate oven in earthen baker until light and nicely browned and serve at once from the baking dish, either with butter or gravy.

Bellevue Salad

Select choice head lettuce, allowing one head to two persons. Remove green outer leaves and cut each head in half, wash and drain thoroughly. Make a French dressing with salt, paprika, oil and vinegar and pour into the upturned halves so that each leaf is moistened. Sprinkle with finely chopped hard-cooked egg and minced chives and serve.

Fried Filet of Fish

Clean the fish thoroughly, then wipe dry and roll in egg and bread crumbs, or if preferred dip in milk and roll in seasoned flour. Place in the frying basket and immerse in hot fat until crisp and delicate. Serve with tartar sauce.

Almond Cream Cake

Cream one-half cup of butter, add one cup of sugar, and mix in alternately one-half cup of milk or water and two cups of pastry flour sifted three times with two teaspoons baking powder. Beat well, flavor and add five stiffly-beaten whites. Bake in two layers.

Whip sweetened cream until stiff; flavor with almond extract; add chopped blanched almonds and spread between and over the layers. Garnish with cherries.

A Telephone Saves Time and Money

It's easy! With a first-class telephone line from home to town you and your neighbors can talk direct to crop buyers every day without driving over those long miles. You can watch the market for top prices—ask the railroad station if your freight has come—order supplies from the store—find out what's doing at the stock yards—set a time with the grist mill for grinding your grain—get the doctor *quick* when you need him. Besides all this, you can talk business or pleasure without leaving your own doors.

Western Electric
Rural Telephones

are standard for use on the farm. Thousands are in daily use by progressive farmers everywhere. If you are still without telephone service, write us for information on how it can be secured. Write the nearest house below, and mention this paper.

WESTERN ELECTRIC COMPANY
Manufacturers of the 8,000,000 "Bell" Telephones
PACIFIC HOUSES:
San Francisco Oakland Los Angeles
Seattle Portland Salt Lake City
EQUIPMENT FOR EVERY ELECTRICAL NEED

$200 to $300 an Acre From a Walnut Grove

in full bearing is not unusual and many groves are producing even more. There's money in Walnuts.

MAYETTE! True Wiltz Strain! For productiveness, freedom from blight, and wonderful Quality, the Wiltz strain of Walnuts has no equal in any other of the standard varieties. Late Bloomer.

FRANQUETTE! True Vrooman Strain! Next to the Wiltz Mayette, the best Walnut for Northern and Central California. Late Bloomer.

Our Scions of Franquette and Wiltz Mayette, cut by R. Wiltz, a pioneer Walnut grower, are not only absolutely true to the strain, but are from selected trees. They are the best.

Write Us First

The Silva-Bergtholdt Co.
P. O. Box A Newcastle, Cal.

When You Turn Under Your
WINTER COVER CROP
Next Spring, use high grade, low cost, finely ground
SHIELD BRAND
Phosphate Rock
The Phosphate of Lime
Reduce your fertilizer bills and secure permanent soil fertility
United States Phosphate Co.
405 Marsh-Strong Building,
Los Angeles.
Salt Lake City, Utah

Hotel Clark
LOS ANGELES, CAL

FRUIT GROWERS HEADQUARTERS
When in Los Angeles, stay at Hotel Clark. Ideal location. One-half block from Central Park. Close to all stores. Extremely reasonable rates. 555 rooms with bath. Excellent grill service—popular prices.
Hill Street Between 4th and 5th.

REPORT OF THE CONDITION OF

FIRST NATIONAL BANK OF LOS ANGELES

At the Close of Business, June 30, 1914

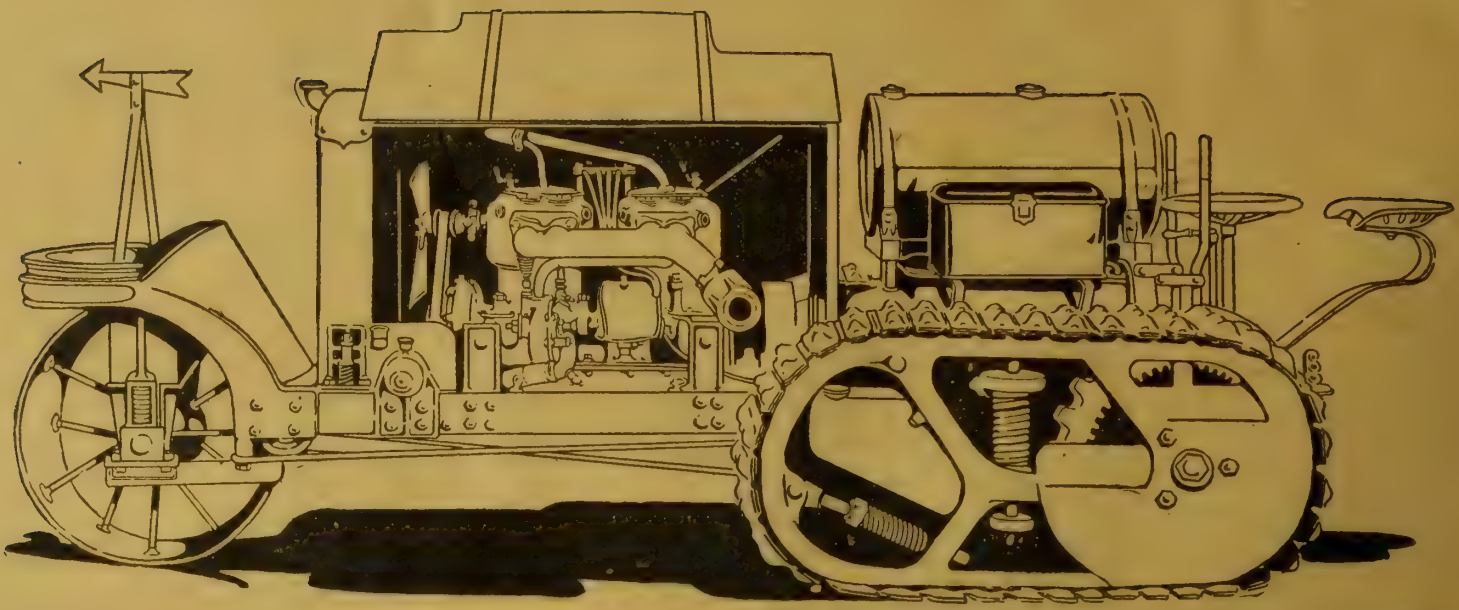
RESOURCES:		LIABILITIES:	
Loans and Discounts	$15,695,660.47	Capital Stock	$ 1,500,000.00
Bonds, Securities, etc	1,251,475.00	Surplus and Undivided Profits	2,510,740.65
U. S. Bonds and Other Securities to Secure Circulation	2,592,875.00	Circulation	1,716,500.00
Premium on U. S. Bonds	None	Reserve for Taxes, etc.	19,580.75
Customers' Liability Under Letters of Credit	93,751.24	Letters of Credit	94,201.24
Premium on U. S. Bonds	None	Bills Payable	500,000.00
Furniture and Fixtures	175,000.00	Notes and Bills Rediscounted	600,000.00
Subscription to the $100,000,000.00 Gold Fund	36,425.00	Bonds Borrowed	620,375.00
Cash and Sight Exchange	**5,919,699.38**	**Deposits**	**18,203,488.45**
TOTAL	**$25,764,886.09**	**TOTAL**	**$25,764,886.09**

Commercial and Travelers' Letters of Credit Issued

INTEREST PAID ON TIME DEPOSITS

I, W. T. S. Hammond, Cashier of the above-named bank, do solemnly swear that the above statement is true to the best of my knowledge and belief.

J. M. Elliott John P. Burke J. C. Drake H. Jevne
Stoddard Jess John S. Cravens Frank P. Flint J. O. Koepfli
DIRECTORS.



built like a high grade auto

Throughout The Yuba Ball Tread Tractor an endeavor has been made to gain greatest strength with least bulk and weight.

It was the adoption of this policy that made the high-grade automobile of the present day dependable, simple to operate and cheap to maintain.

THE YUBA BALL TREAD TRACTOR

An ample margin of safety is built into every portion of the machine. Each part is made strong enough to withstand much greater strains than it will ever be called upon to bear in the course of ordinary work. Highest grade materials and careful workmanship insure maximum wear and reliability.

In outward appearance The Yuba Ball Tread Tractor resembles an automobile—neat, clean-cut, pleasing to the eye.

There is a booklet describing it fully.

THE YUBA CONSTRUCTION CO.
433 California Street, San Francisco
Dept. D7
Works, Marysville

CALIFORNIA CULTIVATOR

Rural Californian combined with California Cultivator

An Illustrated Weekly Magazine, Devoted to the Rural Home and Ranch

LOS ANGELES November 19, 1914 SAN FRANCISCO

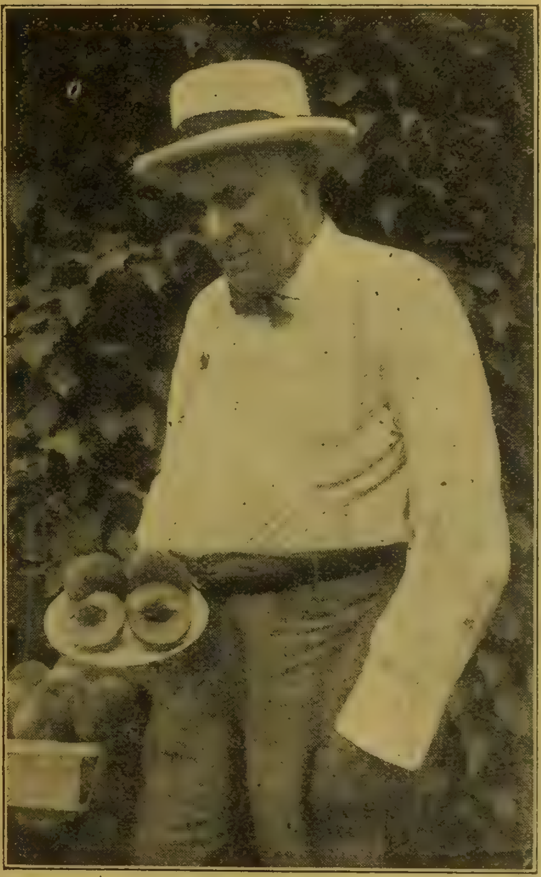
A Personal Glimpse

A Look In at the State Fruit Growers Convention with the Little Camera. Amongst the Thousands Attending We Were Able to Get Only a Few on Account of Cloudy Weather

Parker Earle, with overcoat, at 83 still interested in horticulture and walking to Convention with San Gabriel Valley growers.

J. H. Reed, Veteran Horticulturist of Riverside, and Inspector Wylle of Santa Barbara County

Wm. Wood, Los Angeles County Commissioner, with L. B. Barnes, of San Diego County.



J. H. Hale, of Connecticut, Georgia and some other states, with "the best commercial peach ever grown."

Commissioner Pease of San Bernardino County and Deputy Commissioner R. B. Jones of Los Angeles, a hard worker for the Convention

A. H. Taylor, Lassen County's Commissioner; Commissioner D. F. Norton of Nevada County, and Inspector (and Whittier Booster) M. W. Sweigert of Los Angeles County

C. C. Chapman, Valencia grower of Orange County, with attendants at Convention

J. F. Wetzel, Commissioner of Siskiyou; Mr. McDonald of Oregon, and Commissioner A. A. Brock of Ventura.

Mrs. Hilda B. Nielsen, Sonoma County jelly manufacturer, and Miss L. D. Clark, in charge of Woman's Section of Convention.

Commissioner Frank T. Swett of Contra Costa, Russ D. Stephens of Sacramento, Commissioner Garden of San Joaquin and H. G. Johnson of Farmers Union of California.

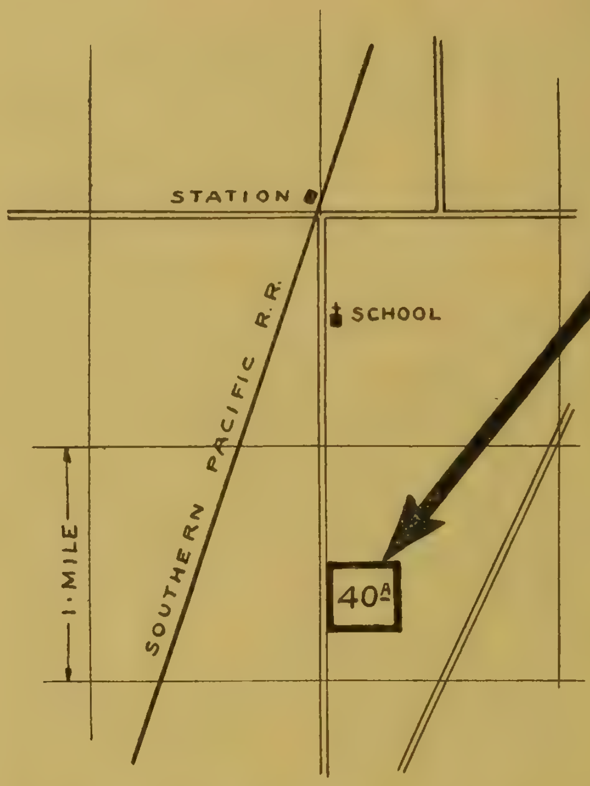
Mrs. Myrtle S. Francis, petunia breeder of Ventura, with attendant at Convention.

Arthur Dunn, Secy. Farmers' Protective League; Carl S. Milliken, Citrus Experiment Sta. Staff, and Com'r. F. W. Waite, Imperial Co.

We Will Start Every Man Right

on a

FORTY ACRE FARM



This forty acres is one and one-half miles from the station on the Southern Pacific Railroad.

Clean, Level, Good Land

It is adapted to growing Alfalfa, Beans, Corn, Almonds, Figs and Olives. Located in the Sacramento Valley, near the Foothills.

It is now without improvements, but ready for immediate crops.

The Price--$150 per Acre. **One Quarter Cash, Balance to Be Arranged**

THIS PRICE INCLUDES a Modern Pumping Plant, completely equipped and installed; WATER WHEN YOU NEED IT. Also a selection of trees and seed; a plow, harrow and cultivator.

THIS EQUIPMENT AND FURNISHING PLACES YOU IN POSSESSION OF A FARM THAT IS READY FOR IMMEDIATE OCCUPANCY AND EARLY CROPS.

REMEMBER THAT NOW—November and December—are the months to prepare the land for a full crop next year. We advise in planting, and supply seed and trees best suited to the land.

Send this paper to any friend who you think may be interested in such an opportunity. We will send a three months' subscription to The California Cultivator, without charge, to any one in the East who is interested in owning a California farm.

Write for further particulars of this inviting opportunity to establish yourself on a profitable and fully equipped farm.

Dudley Moulton

Formerly Agricultural Expert, United States Department of Agriculture, and Deputy State Commissioner of Horticulture of California.

12th Floor First National Bank Building, San Francisco, Cal.

Excursion to the Property Every Friday and Saturday

California Cultivator
Rural Californian combined with California Cultivator
Vol. XLIII No. 21 LOS ANGELES: THURSDAY, NOVEMBER 19, 1914 One Dollar Yearly

45th State Fruit Growers Convention

State Commissioner Cook Calls to Order the Largest Fruit Growers Convention Ever Held in California. Over 1200 Registered. Next Convention to be Held at Stanford University. A Full Week of Interesting Discussions, Together with Instructive Exhibits. Most Interesting Topics, Legislation and Permanent Society Organization

HAVING been present at many of the conventions of the State Fruit Growers in California, where the registered attendance was less than 200, it certainly was gratifying to note that the registration at the convention just closed in Los Angtles passed the 500 mark, then passed the 800 mark, and later the 1,000 mark, reaching finally even past 1,200, which made it apparent that the last State Fruit Growers convention was the greatest ever. It will be recalled that the previous convention at Davis reached a total registration of 722. The registration, however, is only an indication of the attendance, for without question, more people came who neglected to register than put their names on the book at the entrance or on the filing cards at the headquarters at the Hotel Clark.

It was a great week, not only in numbers, but in results. Perhaps the most pleasant feature, and possibly the most educational, was brought out by the social side of the convention. The exhibit rooms, the hallways leading to the assembly room and the lobby of the Hotel Clark were one continual hum of greetings and conversation.

If there was a weak point in the program it was its length and the length of most of the addresses, which prevented discussion. In face to face conversation the discussion was continued, however, and, as noted, I believe this was the most valuable feature of the whole convention. One feature was a distinct surprise; for the first time in the history of this old association there was made an exhibit of appliances and tools useful to the orchardist. This exhibit comprised almost everything from tractors, of which there were six, through the range of cultivators and plows and other implements down to even the tiniest tip for the spray rod. In the arcade, hallways and gymnasium of the old normal school there were exhibits of plants and grasses, pumps and even small engines, water tanks and frost fighting pots, blasting powder and other items, mention of which would fill a column of this paper. Not content with the interest manifested, the exhibitors employed a quartette of colored singers with their banjos, and their music competed with the general program. Fortunately, however, the music was far enough away so that it did not disturb.

The Exhibits

The most educational of the exhibits was that of the citrus experiment station of the University of California. The large room just off the main entrance to the assembly hall was filled with exhibits showing results of fertilizer applications and of soil treatment. Also there were exhibits of roots and trunks of trees which had been destroyed by foot rot or mal di gomma and many kinds of fungous trouble. These exhibits were made more effective by display of large photos of tree trunks and tree tops. One feature which encouraged citrus growers by the promise it gave of future utilization of the wastes of the citrus industry was the display of marmalades, jellies and other products made by the laboratory of the department of agriculture. This consisted of oranges and lemon oils and extracts, ctirate of lime, and many other by-products. These are seldom produced in California in a commercial way, but the department has been conducting experiments for the past few years, and it is expected that these investigations will lead to more extensive saving of our waste products. This will have the advantage not only of turning more money toward the fruit grower but also will aid in keeping much low grade fruit out of market.

EUGENE GRUBB OF COLORADO AND CALIFORNIA
Potato Expert Just Returned from Europe Where He Has Been in the Interest of the Panama-Pacific Exposition.

Luncheon and Excursions

Referring again to the social side, there were various features, but two on Friday are worthy of mention.

The Los Angeles chamber of commerce and the sixth district agricultural association united in a luncheon to 100 or more horticultural commissioners and visitors from the northern section of the state. The luncheon was tendered in the assembly room of the permanent state exposition buildings erected at the sixth district agricultural park. This building has been constructed for some years, but it was not until within the last few months that the exhibits have been installed, and it was a surprise even to those who have known of the existence of this building and a permanent exposition in Los Angeles. There are some of the most perfect examples of processed fruit ever seen, and the method of arranging the exhibits makes the entire display a work of art. There is none of the cheap bunting appearance to any of them, and all has the appearance of permanency. The building is arranged as an exhibit chamber, and in addition to the assembly rooms there are rooms arranged for moving pictures and lantern slides. The entire institution is made an educational factor which will be state-wide in its influence.

In addition to the state building, on the same grounds is a permanent museum and art gallery built by the county of Los Angeles. The interest manifested in the anthropological exhibits exhumed in the brea beds west of Los Angeles was so great that it was indeed hard to get the attendants away from them, and many expressed the desire to return and inspect more fully.

On the same afternoon the chamber of commerce of Whittier tendered a complimentary excursion to those who could break away from the convention program and go to that thriving city some 20 miles southeast of Los Angeles. The private car carrying the guests was greeted by music of the state school band. Autos were in waiting and the fruit growers were given a two hours' ride through the rich citrus and walnut groves of Whittier and La Habra. A stop was made at the beautiful country home of Mr. S. W. Barton, where all were urged to fill their pockets with walnuts; another at the much talked of Ganter avocado tree. A luncheon was served at the Elks' club rooms, and opportunity given for a general social time. President Robbins and Mr. Arnold of the chamber of commerce told some of the nice things about their home town that they had forgotten to mention in the course of the drive, and the visitors, through Harry P. Stabler, horticultural commissioner of Sutter County, expressed their appreciation of the afternoon's entertainment.

The one thing pleasanter than showing California to appreciative easterners is showing California to thorough going Californians, and this was what the people of Whittier had to do. The visitors from Siskiyou, from Humboldt, and all the counties down to Los Angeles were ready to admire, and indeed they found ample grounds for admiration and were not slow in expressing it. The beautiful Whittier citrus belt and the hospitality of the City of Friends will be the brightest spot in the memories of those attendants at the State Fruit Growers' Convention who were so fortunate as to take the trip.

On two or three occasions during the convention there was more or less spirited discussion, but the program was so filled that there was little opportunity for the heat to become oppressive. One rather warm occasion was at the discussion of the formation of a permanent association. The state "association" has been in existence for the past 30 years or more without any definite organization. All who have entered the doors of the assembly rooms have been constituted "members" with full voting power. This resulted on one or two occasions some years ago in packing the convention for the sake of influencing the resolutions. It has been felt by many that this loose form of organization should be succeeded by something more definite, as at present the state horticultural commissioner and his secretary are the only recognized authority. For the past few months several have discussed in a general way the matter of perfecting such an association and when it was brought before the convention the plan was unanimously supported and a committee appointed to make recommendations. This committee's report was:

STATE COMMISSIONER A. J. COOK AND C. C. TEAGUE OF LIMONERVA ORCHARDS.

Report of Committee on Permanent Organization

Your committee appointed to consider permanent organization of the horticultural interests of the state have carefully considered various

(Continued on Page 486)

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Citrus and Tropical Fruits

AVOCADO CULTURE AND EXPLOITATION

Translation from the Spanish Made for California Cultivator

By I. J. Condit

THE "aouacate" was at first thought to be native to the West Indies but later writers state that it was introduced into the Spanish colonies from Colombia. Oviedo, about 1526, recognized that the avocado was not really a pear tree but resembled the laurel more closely. Some of the early historians have described the fruit as being a food of great importance to the natives of South America.

The name which has been proposed for the fruit is the "avocado" which is as widely used as "alligator pear," and although the name is not free from objectionable points, its adoption would help to prevent confusion between this salad fruit and the true pears. In Chile, Peru, and Ecuador, it is called "palta," a name which is said to have been given it by the Incas who brought it from the province of Palta to Cuzco Valley.

The avocado belongs to the family Lauraceae, genus Persea. It is generally a tall tree, but there are some dwarf varieties. In some kinds the skin of the fruit is soft, smooth, flexible and very thin, while in others it is tough, granular, and sometimes very thick. The seed contains an astringent, bitter, and milky juice which gets black when exposed to the air, forming an indelible ink. Some authorities, Mez for example, name 47 species of the genus Persea, which produce avocados, all of which, with one exception, are native to America. On the other hand Pax admits but ten species, only one, Persea gratissima, being native to America. In some cases these authors used the fruit as a basis for classification, in others, the flowers and leaves of the tree, as among the 47 species described by Mez there were 28 the fruit of which was unknown. Observations made by Schomburgh show that the seed frequently presents three cotyledons and sometimes the seed sprouts in the tree itself, a fact which led him to believe that these seeds might serve as a sure means of propagation without necessarily resorting to graftage.

The plant did not spread as a cultivated plant in the old world until commercial relations with America had become well established. A great number of varieties are now cultivated, however, especially in the region between the tropics, extending to about 36 degrees latitude, although some varieties can be grown outside these limits. Its culture has been stimulated in Cuba, Costa Rica, Guatemala, Peru, Brazil, Hawaii, Porto Rico, Jamaica, California, Florida, Canary Islands, Australia, and in a general way in Mexico, Central and South America. The avocado zone extends from the region of the pines to that of the mangoes, the temperate climate producing the most palatable fruit. The avocado tree thrives in nearly every state in Mexico and its culture should be extended.

The diversity in form and color of the Mexican avocados is such that an almost perfect and continuous gradation can be formed, with very few laps or discontinuities. The varieties of Costa Rica have a somewhat darker colored flesh near the skin, while those of Cuba have the skin and flesh perfectly distinct, and the flesh does not contain bundles of fibers as it does in other varieties. The fruits of Hawaii are of larger size and several fruits mature on the same branch. Acosta relates that he made the distinction between the avocados with thick skin and those with thin skin in 1590; he described the palta as a large tree with very big leaves and fruits resembling pears, with a big seed and soft flesh which separates from the skin and both looks and tastes like butter. The fruit called "palta" was used long ago in Mexico as a food; this fruit has a good taste and thin skin which can be taken off as easily as that of a stewed apple.

The numerous applications and uses of this fruit make it possible to prepare several very delicious culinary products from it. The proportion in weight of flesh, seed, and skin is variable, but on an average it is about 9:2:1; of this only 20 to 25 per cent must be considered, as the rest is water. The great amount of oil contained in the flesh makes the fruit comparable to the olive, although the latter fruit contains in some varieties much more oil than the former. The oil of the avocado has been separated and studied by some chemists who named it "Grasa Persea," or avocado oil, said to be similar to laurel lard (oil extracted from Laurus nobilis).

The avocado is more exacting as to climate than as to soil. In Porto Rico compact clay soils are good for the avocado if good drainage is provided. Low, undrained land is not adapted to its culture, as the roots will not thrive in a water-logged soil. In a general way it can be said that an avocado orchard should be in a deep, fertile soil, with a porous subsoil. There are many varieties in Mexico which grow and thrive in cold climates such as the Federal Districts, Atlixco, Tecozautla and others where there are severe winter frosts. The abundance of avocado crops sometimes gives name to a place as in Tizapan, where a part of the city is called Aguacatitla, excellent fruits having been produced there since early times. The climate there is cold and the soil contains a grat proportion of clay and humus. In the warmer sections the "paguas" reach a greater development. Since strong winds are injurious to the trees they should be planted only in protected places. There are many places which produce without great care or cultivation very good fruits of the best flavor and excellent taste, qualities which cannot be due to improved systems of cultivation but only to favorable local conditions.

In some places such as the district of Amealco, State of Queretaro, in a ravine called "El Chamacuero," there is a wild variety in great abundance, which has a small, black, oblong fruit as big as a prune, with a very thin skin and soft flesh, the color of which is a dirty green and the taste of which is bitter. The seed is also very small and oblong, having an integument adherent to the stone. The stone is fertile and the plant undoubtedly propagates itself by this means. It is a branching shrub so exuberant and abundant that it forms thickets. The leaves are opposite, entire and similar to those of the laurel. It is commonly called "Aguacate de Coyote" or "Aguacate cimarron." It is certain that these wild plants would improve with cultivation and could be used as stock for other varieties.

The avocado can be propagated either by seeds or by buds, the former method being most common, since the art of budding has not been much diffused among the people. Selected seed should be planted as soon as possible to prevent drying and early loss of vitality. The seedlings are transplanted to their permanent place in the field at the end of a year, most of them being left to fruit as seedlings, a few others being budded. The large tap root of the avocado makes transplanting difficult, and care should be taken not to injure or mutilate this root. The advantage of budding the avocado are: the tree is almost certain to produce fruit in one year from budding; the size of the tree can be controlled; orchards can be made to contain trees of only one variety; the hardiest and best variety for stock can be selected. Flute-budding is recommended. A rectangular bud is taken from a healthy branch, placed on the stock where a similarly shaped piece of bark has been removed, and then waxed over. Shield budding in the form of an inverted T may also be used. The avocado can also be propagated by means of cuttings and layering, but the operation in the first case is doubtful of success and in the second laborious.

Heavy clay soils are dangerous for the avocado trees as such soils are liable to crack, leaving the roots unprotected and exposed to the heat of the sun. A leguminous cover crop which will also serve for forage may overcome this difficulty. The land should be irrigated whenever necessary to prevent excessive dryness. Irrigation is not advisable during the blossoming time as it may cause the blossoms to drop; it is better to apply water at the beginning of this period to facilitate the blossoming. The improvement of an impoverished soil in the case of the avocado consists in supplying potassium nitrate, ground bone, and vegetable ashes, but the amount and proportion of each of these substances will be subject to the analysis of the soil. Young orchards on fertile soil will maintain a good crop for many years.

Certain factors influence the production of fruit. An excessive humidity interferes with the proper pollination of the flowers (this is also the case with the mango), and many plants do not produce fruit at all. To avoid this the time of blossoming must be modified. Varieties adapted to humid sections may be introduced or judicious root pruning to encourage blossoming may be practiced. This is accomplished by nature in the case of some trees growing in rocky ground; the roots run along the crevices and cracks and the checked development produces an increase in crop. The operation of uncovering the roots and exposing them to the air is dangerous and it is therefore best to follow the practice of many growers in several sections of Mexico who prune the roots carefully to increase the production of fruit. By means of these methods the time of fruiting and the quality of the fruit are modified. A reduction in the size of the seed, either by selection or by breeding, is important. The seed should fill the cavity, for if it is free to move from one side to the other, the flesh is bruised during transportation and decay is more liable to occur. Another important point in the improvement of the fruit is the appearance and texture of the flesh which should be free from fiber. As to the flavor of the fruit it was found long ago that the varieties of smaller fruits, although having less flesh, are of delicious and excellent taste, especially those coming from Southern Mexico. Fruits of poor taste are very rare, and when they are found it is generally due to the fact that they have been picked too green or spoiled by a forced maturity.

It was at first believed that the largest avocados were produced in Porto Rico, but still larger specimens have been found in Florida. Although the size increases the beauty of the fruit, it does not at all improve the quality. Medium-sized fruits are in great demand among the majority of consumers, while the larger or exceptionally large ones are sought only by a few merchants. A point of much greater importance than the size of the fruit is the proper presentation of it in markets distant from the point of production.

The principal insects which attack the avocado are: Hoplophora monogramma, the avocado fly, which sucks the sap from the tender shoots and sometimes the leaves; Copaxa multifenestrata, the avocado butterfly, which occasionally does some damage; Triofas magnoliae, a gall insect which works on the leaves; and a curculionid beetle called in some places "Picudo del Aguacate," the larvae of which make long galleries along the branches between the bark and wood. A fungus, Rhytisma persea, often attacks the leaves, interfering with their functions and causing them to dry up little by little. A species of Tillandsia or moss and several species of mistletoes are often found living on the tree.

The profits of an avocado orchard are great because the tree continues in full bearing from 50 to 60 years, many trees often producing more than 1000 fruits. Little attention has been paid to this crop, and it may be true that with the increase of production the prices will be lowered, but on the other hand new markets will be formed and the increased demand will restore the good prices. In short, the prolific nature of the tree and the small expense connected with its culture will make this one of the most profitable fruit crops.

(A copy has recently been received at the university, division of citriculture and a translation made of Boletin Numero 71, de la Estacion Agricola Central Mexico, entitled "The Culture and Exploitation of the Avocado" by Gabriel Ruiz Valencia. The bulletin was written in June, 1912, and consists of 70 pages of text with several figures of fruit and leaves and seven colored plates of insects and diseases.)

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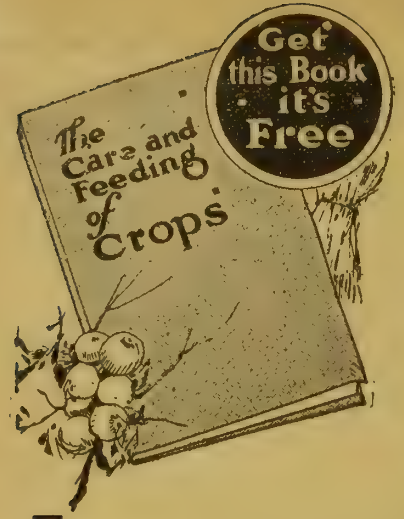
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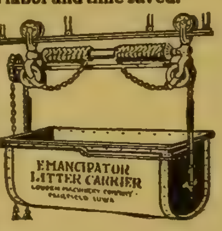
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FRUIT GROWERS' CONVENTION

(Continued from Page 483)

types of organization and desire to submit for your deliberation at least two types of organizations.

First: The committee have considered the organization as at first proposed of a state horticultural society to be composed of all horticultural interests of the state with a corps of officers elected annually, and publishing annually a report of their proceedings financed by the dues of members. The committee believe this plan to be thoroughly practical and think that such an organization once started would attract a membership of from 2000 to 3000 people, which with annual dues of from $1 to $2 would furnish ample means for the publication of the report of the society. The committee are highly in favor of such an organization, if no better plan can be devised.

Second: The committee have considered a second plan which is more ambitious and appeals to them as preferable and as one likely to command the interests of the agriculturalists of the state because of its broader conception and its greater ultimate usefulness in the development of the agricultural interest of the state. This second plan contemplates organizing in one great society all of the varied agricultural interests of the state, including horticulturists, agriculturists, stock raisers, dairy men and men engaged in scientific research related to agriculture. Such an organization would be comparable to the American association for the advancement of science.

The committee contemplates that such a general California agricultural society would have its corps of officers for the general association, and then would be composed of various sections representing the different horticultural and agricultural interests of the state, as for instance the following sections:

First. Citrus fruits.
Second. Deciduous fruits.
Third. Tropical fruits.
Fourth. Small fruits and bush fruits.
Fifth. Nursery interests.
Sixth. Dairy section.
Seventh. Live stock section.
Eighth. Grain section.
Ninth. Vegetable section, and such other sections as demanded by any special agricultural interests. If such an organization were formed the general association would probably hold a meeting biennially, at which business matters of general interest could be taken up, and the association in general be directed by its executive committee consisting of the officers of the various sections.

The different sectional meetings could be held as often as the various sections desire, and in places most convenient for the members of such sections.

The committee see many difficulties in the organization of such a general society, but believe that such difficulties can be overcome, and that a broad general agricultural organization of this sort would strengthen and cement the varous agricultural interests of the state. They would recommend that a strong committee be appointed by this meeting for the careful consideration of these suggestions, and for the drafting of permanent plans, constitution and by-laws to be presented at the next meeting of this association for consideration and action.

We would further recommend that this committee consist of seven members appointed by the chairman of this convention, of which he should be one.

Respectfully submitted, C. B. Messenger, W. B. Ames, H. J. Webber, R. C. Allen.

This report was no sooner before the convention than several connected with the recently formed Farmer's Protective League opposed the adoption of the report on the grounds that such organization had been formed in the Sacramento Valley and was of sufficient scope to accomplish all that could be accomplished by a newly formed organization.

It will be noted that there were two recommendations made by the committee. The first is for the organization of a horticultural society, which would be practically putting on an organized basis the institution which has existed for so many years. The other is far more ambitious, and we believe has a great future if the fruit growers and farmers generally can be brought to see its advantages Careful reading of the report of the committee, which was finally approved without a dissenting vote, will give an idea of the work which may be accomplished by such an organization.

Another report, on which there was no fight whatever, but which had been awaited all week with anticipation of a fight, was that of the legislation

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We again solicit the fruit tree and vine orders of the planters of the West, knowing that nothing but the **Best** will satisfy the experienced buyer. Twenty-eight years of successful nursery business has proven the quality of

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committee. This committte has been working on proposed legislation for more than a year, and many diverse interests have been anticipating recommendations which they would be compelled to antagonize. However, as will be seen by the accompanying report, the recommendations were all of a general nature and did not draw out a fight which had been anticipated, or rather the fight was settled in the committee before coming before the convention.

Report of the Committee on Legislation

DEAN THOMAS F. HUNT OF THE STATE AGRICULTURIAL COLLEGE

As a result of a consideration of the various statutes relating to agriculture in the state of California at the meeting of the State Fruit Growers' Convention in Davis, and of a further consideration during the present meeting, your legislative committee, in the interest of economy, efficiency and the development and protection of the resources of the state, recommends that the State Fruit Growers' Convention records itself as favoring the creation of a state department of agriculture to be administered by a secretary of agriculture. The secretary of agriculture should exercise all the executive and regulatory powers and should perform the duties now vested in and required to be performed by such boards, commissions and officers as follows:

The state board of agriculture, the state agricultural society, the state commissioner of horticulture, the state board of horticultural examiners, the state dairy bureau, the board of veterinary medicine, the state veterinarian, the state board of sheep commissioners, the stallion registration board, the state board of viticultural commissioners, the state board of forestry, the state forester, the conservation commission of the state of California, the state superintendent of weights and measures; the state analyst, the Redwood park commission, the reclamation board of the state of California, the state water commission, and other statutes relating to agriculture not properly belonging to the functions of the University of California.

Your committee recommend that the convention refer the matter to the legislative committte for the purpose of having a bill prepared and presented to the legislature which shall embody the principles set forth in the foregoing resolution. Respectfully submitted, C. C. Teague, Chairman; G. H. Powell, T. F. Hunt, Peter Shields, H. J. Webber, A. J. Cook, W. A. Johnstone, E. K. Strobridge, P. F. Cogswell, G. H. Hecke, M. DeMott, Geo. C. Roeding.

Report of the Committee on Resolutions

Whereas, there have been gathered together for this meeting a large number of valuable addresses and discussions from which the people of the state of California will derive much lasting benefit; be it

Resolved, by the 45th State Fruit Growers' Convention, in convention assembled, that we hereby express our sincere thanks to the state commissioner of horticulture for his strong efforts in procuring this program and in carrying it through to a successful meeting. We would further express our appreciation of the part taken in the arrangements and program by the citrus experiment station of the college of agriculture. We desire further to thank all the speakers who have taken part in the various meetings.

(Continued on Page 490)

Peaches $10,000 Worth — 400 Tons from 900 Trees in Six Years from Planting

Read This Letter from Mr. C. H. Schmidt of Selma, Cal., who is Shown Beside One of His Peach Trees when They Were Three Years Old:

Selma, Cal., Nov. 14, 1914.

Mr. Geo. C. Roeding, Pres. and Mgr. Fancher Creek Nurseries, Fresno, Cal.

Dear Sir:—

I think you will be interested in a brief outline of what I have accomplished with the peach trees which I purchased of you in 1908.

In the first place, the trees that you supplied me with were just the kind of nursery stock that I know Roeding invariably supplies to his customers. I am only one of the many boosters you have throughout the West who can point with pride to Fancher Creek Nursery grown trees which have created a standard of their own through the exceptional care and thought you have given to the perfecting of all your stock.

The very fact that I had the right kind of a start and in connection with this, that I gave proper attention to the matter of pruning, cultivating and fertilizing has, in a measure, contributed to the very satisfactory results which I have succeeded in obtaining. You have visited my orchard from time to time, but I do not believe you have ever fully realized the success I have met with.

My orchard is now six years old and up to and including 1914, I have delivered from the 900 trees, 400 tons of peaches and have received for the same the tidy sum of $10,000. If I do say it myself, I think there are very few orchardists who can make a more favorable report than this.

Only recently I measured a few of these trees and I was very much surprised to find that they average from two to three feet in circumference a foot above the ground, while neighboring orchards, planted on the same character of soil, ten years of age and older, would not average over one foot in circumference.

I think I have demonstrated very fully that any fruit grower who will secure quality trees to begin with, such as you always furnish, and will put the proper thought into the care of them, will meet with the same result that I have obtained. I want to take this opportunity of thanking you for the advice that you have given me from time to time, and I want to say further that it is this kind of service which does not end after the sale of an article that is appreciated."

Yours truly,

(Signed) C. H. SCHMIDT.

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Geo. C. Roeding, Pres. and Mgr.

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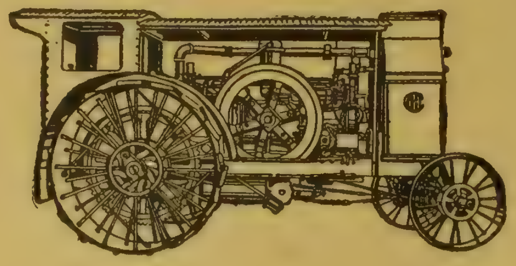

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Simple mechanism, protection of parts, ease and convenience of operation, economy of fuel, complete equipment—make International Harvester tractors last and satisfy you longest. Study their records, ask their owners about them, an dwrite us for catalogues. I H C tractor sizes range from 6-12 to 30-60 H. P. operating on kerosene and gasoline. The new 12-25 light-weight Mogul will interest every owner of a small farm.

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General Agriculture

THE RICE SITUATION IN THE SACRAMENTO VALLEY

Editorial Correspondence

RICE growing as an industry is established in the Sacramento Valley. The first experimental stages have been passed and the problem now is not "Will rice grow?", but "How should the soil be prepared?" "What variety will mature earliest and produce a satisfactory quality of rice?" "How can rice crop be rotated to insure permanence to the industry?" "How can irrigation water be conserved?", and similar things.

Far seeing men who have had the agricultural progress of the Sacramento Valley at heart have believed that rice would some day be a great industry here. Many years ago Hon. Frank Freeman of Willows, Glenn County, secured an appropriation from congress for rice experiments to be carried on in cooperation with state agencies. The project failed for lack of appreciation by legislators in this state. Through all these years he has continued untiring in his efforts to promote the industry. Wm. Grant, agricultural expert and manager for Balfour, Guthrie & Company, began experimenting with rice on one of that company's properties near Biggs several years ago and demonstrated commercial possibilities. Experts in the United States department of agriculture have been working on the prob lem- for a number of years conducting experiments in connection with individuals and companies. C. E. Chambliss, of the bureau of plant industry, has been in charge of this work and great credit is due to him. The government rice experiment station at Biggs has been of value to the industry in trying out varieties, methods, etc., and will continue to be of more and more benefit in years to come. E. L. Adams, in charge at Biggs, is a safe counsellor for rice growers and those contemplating the planting of rice. Conscientious, hard working, trained agriculturalists who have the best interests of the industry they are connected with at heart, as Mr. Adams has, are of inestimable value to the agriculture of America and are a great credit to the United States department of agriculture. The Sacramento Valley Development association has been helpful in the development of the rice business. Four years ago the Sacramento Valley Irrigation Company, at Willows, in Glenn County, grew 42 varieties of rice in a cooperative experiment with the United States department of agriculture. Many other individuals and agencies of different kinds have been and are now engaged in the work of developing a new and great industry for California.

A number of elements are essential in the rice business. These are soil, irrigation water, cultural methods, varieties, climatic conditions, rotation of crops, prices—all of which determine yields and profits.

These subjects will be discussed as the Cultivator sees the situation now. It must be understood that there will be those who do not agree with all of our observations—and it must be also understood that the industry is in a state of evolution and practices that seem to be right in the light of present information may be found radically wrong later.

Soil

Practically all of the rich and heavy clay and silt soils of the Sacramento Valley are suited to rice growing as far as containing a sufficient quantity of the elements of fertility is concerned. If they can be handled so that these elements can be made available to the plants they will produce many profitable crops before commercial fertilizers will be necesary. The difficulty will be in getting and keeping the mechanical or physical condition that permits the bacterial action that liberates these elements of fertility. The soil must be plowed and worked when the moisture content is right; if too wet it dries in brick-like lumps; if too dry it breaks up in rock-like chunks that are hard to work into a seed bed. And when these chunks are broken down they do not granulate as mellow, moist soil does, but form dust and smaller chunks which run together and get hard again when they are wet.

Next to containing fertility, a soil to be suited for rice must be capable of retaining moisture not only in the body of the seed bed but on the surface. In order to accomplish this either the entire body of the soil must be compact and of fine texture so that water does not penetrate into it readily or it must be underlaid by an impervious stratum that will retain the water in the top soil and on the surface. In the Biggs-Gridley country on the east side of the Sacramento Valley the black adobe top soil is underlaid by a yellow clayey marl that holds up the water admirably. On the west side the heavy alluvial silt and clay is so dense that it holds water up even better. In fact the problem in irrigating any other crop on this land is to get moisture to penetrate deeply enough to permit deep rooting of the plants.

Rice is being grown on lands more or less heavily impregnated with alkali, and the crop seems more tolerant of it than are some others. On heavy clay soils in which the alkali content is high when a section six feet in depth is considered—but where the stratum heavily impregnated with alkali is 18 inches or more below the surface, rice is apparently little affected by the alkali during the first one or two years, probably because the feeder root system is principally in the top six or nine inches of soil and because the soil is so dense that there is no upward movement of alkali salts by capillarity. Where soil is covered with six inches of water for several months feeder roots are compelled to stay close to the surface because that is where the oxygen is. But on land where there is a heavy coating of alkali on the surface rice has not been a satisfactory crop nor can it be expected to be until the alkali is washed off or removed by drainage.

The deep rich alluvial lands of the Moulton ranch in Colusa County are producing splendid crops of rice.

Irrigation Water

The principal water requirement for

rice seems to be that there be plenty of it. It is generally figured that the requirement is at least five acre-feet per acre for the season. Much more than that has been used on some fields this year.

Water from gravity irrigation ditches or that pumped from the Sacramento river is generally used. The cost in the Biggs country and at the Moulton ranch in Colusa County, is $1 per acre-foot per season. Estimates for pumping from wells are higher than this.

Some rice growers claim that well water is not as good for rice as river or creek water—and that if water from wells is used it should first be reservoired. Others who have made a study of the situation can find no reason why this should be so unless the well water were heavily charged with injurious salts. What the rice wants is water, and it is not particular as to the source. Well water may be colder than river water when it comes from the well, and if it came in contact with many plants while it is at a low temperature their growth might be checked, but water spread out in a thin sheet over several acres of Sacramento Valley land in a summer day cannot long remain cold.

RICE FIELD NEAR GRIDLEY, BUTTE COUNTY
Courtesy Sacramento Valley Development Association.

Most ditch water from Northern California rivers or other streams carries so little silt during the summer that this factor is a negligible one in comparing well water with stream water. If much silt was carried it would be a serious thing because of filling up ditches and distribution structures.

It is desirable to have irrigation water as free from weed seeds as possible. Water grass, as the barnyard millet (panicum crus-galli) which infests rice fields is called, tule, flag, willow and cottonwood seeds are a detriment to irrigation water for rice.

When rice is sown in a seed bed too dry to germinate the grains, it must be irrigated to bring it up. After it is six or eight inches high, or when "tiller," the field is flooded to a depth of three to six inches and the water remains until the grain is in the "dough," generally about three months. If rice is planted and up by April 15—and it takes until some time in June to get high enough to flood—the field would be flooded during a part of June, July and August and some of September, leaving the last of September to get the field dry and the harvesting well under way.

Various methods of applying water have been used; from merely keeping the checks filled and allowing none to run off, to running a big head through the checks constantly so as to give a decided circulation to the water and change the entire volume frequently. The latter system is very wasteful, and very satisfactory crops of good rice have been grown where no water is run off the checks at all, water being applied only to supply the loss from percolation and evaporation and keep the plants in five or six inches of water. One good grower permits a very small stream to pass through the checks, and this probably represents the best present practice.

The flooding is necessary because the rice plant throws out a water root system without which it will not yield seed satisfactorily.

Cultural Methods

In preparing a field for rice growing it is first necessary to check the land into borders to hold in the irrigation water. Most land on which rice is grown is very level, and rough borders thrown up with a road grader or big ridger along the lines of the contours are generally sufficient. Very little dirt is moved within the checks—only that from high spots or ridges. This sometimes leaves places where the water is a foot or more deep. It would probably be better to fill these holes somewhat so as to have an even depth of water, for the three to six-inch depth of flooding has been found to be the most satisfactory. Where the soil has simply been saturated with water and none left standing around the plants the yield has been lower. Checks in the ditches and boxes and gates to control the flow of water from the ditches to the checks must be provided. Estimates on the cost of preparing land for rice irrigation range from $2 or $5 to $25 or $30, depending on the character and contour of the land and the care with which the work is done.

Much of the land used for rice is heavy adobe or clay and must be plowed and worked when rain and other conditions permit, which is not always as the operator would like to do the job. It is a benefit to heavy land of this character to fall plow it (if crops are grown continuously without summer fallowing), so that it can "slack out" and weather as much as possible before the crop is sown, the idea being that turning the heavy soil up to the air permits the oxygen to enter and make possible greater bacterial action for the liberation of plant food. Then in the preparation of the seed bed it is a benefit to disc and harrow often for the same reason.

The land is prepared for sowing rice the same as land is prepared for barley; plow, disc and harrow in such a way and as frequently as is necessary to make a mellow and open but well firmed bed for the seed to germinate and root in. The seed is sown with a good grain drill the same as barley. From 80 to 90 pounds of seed per acre are sown, and the depth of planting is one and one-half to two inches.

When the rice grains are in the hard dough stage the water is turned off and the ground allowed to dry so as to hold up horses and self-binder. This requires ten days to two weeks or more, depending on the soil and weather. Rain at this period delays harvest. If rice is in the bundle or shock or stack it will stand a great deal of rain and weather after ripening without the grains shattering from the heads, but good crops were lost last year because they were so late that the rain prevented cutting. After binding the rice is shocked and allowed to remain in the shock a couple of days before threshing with a regular threshing machine. Drying north winds at this time are a favorable condition. Last year some stood out in the shock all winter and was threshed in the spring.

Early planting is an essential. April 15 should be the last date for planting although much was planted in May this year. The season has been unfavorable in that it has been too cold, but the long late fall may permit the saving of much of this late rice. A long chance is always taken with late planting.

Another important factor is to have a well worked, mellow, fine seed bed—as for any other grain.

Varieties

A great many varieties of rice from all over the world have been tried and are yet under trial. In general two sorts of rice are grown in the United States: Honduras or long grained rice and the Japanese with a short grain berry. Until this year Honduras has sold highest, but now there is little difference in price. Because Honduras is later in maturing

(Continued on Page 511)

$200 to $300 an Acre
From a Walnut Grove

in full bearing is not unusual and many groves are producing even more. There's money in Walnuts.

MAYETTE! True Wiltz Strain! For productiveness, freedom from blight, and wonderful Quality, the Wiltz strain of Walnuts has no equal in any other of the standard varieties. Late Bloomer.

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We are making very attractive prices on a number of vehicles that we are closing out.
Bright, fresh, new goods at prices way under anything ever offered heretofore. Call and see them.

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BRANCH—1228 "H" STREET, FRESNO
(1)

FRUIT GROWERS' ASSOCIATION

(Continued from Page 487)

Whereas, this convention has been very comfortably housed and everything possible has been done for its comfort, education and success, we do hereby express our deep gratitude to the committee of arrangements, and especially to Messrs. Messenger, Wood and Jones of Los Angeles, for their untiring efforts on our behalf. We would further express our thanks to the Los Angeles chamber of commerce, the city of Los Angeles, the daily press for excellent reports, to Mrs. Thorpe and pupils and to the Birkel Music Company for music, the Roeding & Wood Company, the Germain Seed Company and the Smith & Dietrich Company for decorative plants, and the management of the Hotel Clark for the many courtesies afforded us.

Whereas, the state quarantine service has been increased from six to 11 officers during the present administration, and the present force is beyond doubt far more efficient than ever before; therefore we do hereby commend the action of the state commissioner of horticulture in increasing this force and do express our utmost confidence in the present quarantine service.

Whereas, the state commission of horticulture has recognized the grave danger of the introduction of injurious insect pests and plant diseases into California through the medium of the mails and especially since the introduction of the parcel post, and whereas, a bill providing for the inspection of all horticultural products at certain points of entry into any state, which meets the approval of the state quarantine service, has been introduced into congress and is known as the Raker bill, therefore, be it resolved, that we do most heartily endorse said bill and urge its prompt passage. Further be it resolved, that a copy of this resolution be forwarded to each member from California in congress.

Whereas, Mr. H. S. Smith, superintendent of the state insectary, and his assistants have been working with great energy and care towards the establishment of new beneficial insect parasites, and

Whereas, certain of these new parasites now appear in a very encouraging way, be it resolved that we express our complete sympathy with this work and our confidence in Mr. Smith's ability, and do hereby urge the continuance of these efforts.

Whereas, the state commission of horticulture has adopted a policy of publishing a Monthly Bulletin, which is filled with timely articles and information in a most readable form, and the appropriation by the state legislature for printing is insufficient to cover both this monthly publication and the complete proceedings of the conventions,

Therefore, be it resolved, that we do heartily approve the financing of the publication of proceedings through some outside medium, as is being undertaken for this meeting, and the continuance of the publication of the Monthly Bulletin.

Whereas, the state of California is at present expending a considerable sum of money for the collection of agricultural statistics through the office of the state statistician, and the sum of money now spent is inadequate when used in the present way for the gathering of reliable and complete data, and the state commission of horticulture is in position, through cooperation with the county horticultural commissions, to gather this data more accurately and cheaply than any other organization,

Be it resolved, that we recommend to the California state legislature that the work of the state statistician be placed under the state commission of horticulture, and that the appropriation now granted for the compilation of data as mentioned above be attached to the commission's office for this purpose.

Whereas, President Benjamin Ide Wheeler of the University of California has appointed a commission with Dr. David Burrows as chairman, to prepare a measure to be submitted to the next California legislature, providing for a system of state colonization and also for a system of state rural credits, and the farmers and fruit growers of the state feel deeply concerned in such measures, believing that if wisely enacted and properly administered they must materially add to the welfare of the commonwealth and its people, therefore, be it

Resolved, that the thanks of this Fruit Growers Convention be hereby extended to President Benjamon Ide Wheeler and to the commission appointed by him to prepare the desired legislative measures, and that the hope is expressed by this convention that such measure will meet with the hearty and earnest support and consideration of the members of the coming legislature.

* * *

In addition Mr. Russ D. Stephens presented a resolution urging approval of a recording thermometer and its use in refrigerator cars in transit from the coast to eastern markets. There has been some contention between fruit shippers and carriers, and the fruit shippers wish to be sure proper icing and proper care is given. A recording thermometer, which will make a correct record of temperatures and not be influenced by the jarring of the car, is now offered to the shippers, and some of these wish a test made. The resolution adopted, however, suggested only that such a trial may be made.

Hale, the Peach Man

The feature of the convention which called for closest attention and greatest interest were the addresses by Mr. J. H. Hale, peach grower of Connecticut and Georgia. Mr. Hale has grown peaches for 47 years and counts his acreage in peaches by the hundreds. Mr. Hale reviewed a bit of his earlier experience in farming and especially called attention to one incident in his life when a quarter of a century ago he came to California, at which time he made suggestions as to pruning orange trees and was told they were never pruned, but now observed from present-day practices of orange growers that he had opportunity to say, "I told you so!" We quote at some length from Mr. Hale's address because it has great interest for California fruit growers. We regret it is impossible to give even sufficient of the address made at this great convention to give readers who were not there even a faint idea of its importance. One point we regretted regarding Mr. Hale's address was that he in no way made reference to the new peach which is the result of his selection from many seedlings. This peach has been called the J. H. Hale peach, and while in the course of his address he referred only to the Elberta and the Belle of Georgia as the peaches which were supreme in the markets of the East, we asked him personally as to his estimate of his own peach, or rather the peach which bears his name. His modesty prevented him from saying very much regarding it other than that for his own table and as a profitable fruit he very much preferred the Hale peach to any ever grown.

We also interviewed Mr. Parker Earle, a veteran peach grower now retired and living near Los Angeles, and Mr. Earle said it was the superior of any peach he had ever seen.

The Hale peach has been fruiting in the East for twelve years. As to its behavior in California there is little opportunity to judge excepting that the fruit of a few trees which bore in their second summer's growth at Yucaipa, above Redlands in San Bernardino County, was magnificent.

With this reference to the Hale peach we will make extracts from

J. H. Hale's Address on Peaches Along the Atlantic Coast

We have grown peaches on the Atlantic Coast for family supply since the early settlement. Commercial peach growing there is over three-quarters of a century old, and when I was a small boy it was thought that God had set aside (they did not put it just that way) a few special regions where peaches would grow. Some portions of New York and New Jersey and a little bit out in western Michigan were supposed to be the only regions east of the Rockies where peaches could be grown, just two or three favored sections. By the way, that favored section theory is being wiped out; there are no special regions now for growing any kind of orchard products. You can today produce a great deal more than was ever dreamed of. In the particular peach growing regions where peaches were planted on a large scale they grew corn or wheat between the rows for the first few years. They practiced moderate cultivation, no pruning. When harvesting came everything was gathered at one time and put in baskets or crates, without any grading or sizing, and shipped to market in the crudest way. They had no refrigerator cars in those days. The belief at that time was that there was a single peach season of a few weeks in August and the first week in September, and that was all there was to it. The peaches were inferior in size, color and quality. There was no system of packing or marketing. They were shipped in bushel baskets, in market baskets or hampers such as are used for vegetables. I know of barrels being made to ship fruit in, 50-gallon barrels. The peaches arrived in the market in some kind of condition, sometimes. In a later day they used shelved cars in which they put the baskets upon the shelves, four shelves high, the baskets being without covers. While those cars were on the road many of the peaches were overturned and the fruit damaged to such an extent that on arrival from 30 to 50 per cent had to be dumped. They picked them out of the cars, piled them on peddler's wagons, and distributed them as best they could.

This had run on for a great many years. Then something happened. Some of the people in the northern part of the state of California began to grow peaches. You could not eat them all, of course. So you began to ship those peaches east. They arrived in fair condition. They were not very eatable, but they looked well. Don't laugh, that is no joke. Now these peaches arrived in the East in June and July. Nobody had ever seen a peach in July and it changed the idea that peaches could only be eaten in August or September. It taught something else, and that was grading and packing. We had very good peaches in the East, but the work of handling and packing was very inferior. We thought you were very far away, that you could never do the trick to any extent, but you did send, and in quantities, and in attractive packages. I don't know that I have ever thanked you, but I will now thank you for giving us a great idea which we have copied from you. We have copied and copied largely. In fact, you Californians helped in a way to revolutionize peach growing on the Atlantic Coast.

In Georgia

About this time a couple of men in Georgia who were growing some of the earlier varieties of semi-cling peaches constructed a refrigerator on wheels something like a big safe that would carry a couple of hundred pounds of ice and six bushel crates of peaches. They brought ice from 250 miles away and shipped it back in these refrigerators, arriving in market some two or three days later. By steamer it took six days to reach New York from Georgia. These peaches usually arrived in fair condition. That was the start of the business on the South Atlantic Coast.

A little earlier I began planting in Connecticut. We were far north, out of the peach belt, but we started the business there. One of the first things after getting the orchard under way was to see what others were doing.

The next great forward move was fruit planting in Connecticut. I planted a commercial orchard with 2000 trees. Now there are millions of trees in the state. There are also hundreds of thousands and possibly millions in western states and in many other states running up even to the Southwestern corner of Maine. The peach territory has extended almost from the Atlantic to the Pacific and from Maine to the Gulf.

New Varieties

The next great forward step was the origination of the two great commercial varieties of today—the Elberta and the Belle of Georgia. It is a singular thing that the two great commercial money-making peaches today that compare with your navel orange in importance—the Elberta and the Belle of Georgia, one a yellow and one a white peach—originated from

(Continued on Page 502)

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The Lawn and Flower Garden

THE CALIFORNIA GARDEN

Written for California Cultivator

By Ernest Braunton

DYNAMITING soils is becoming quite universal, and through this practice large areas once considered worthless for field and orchard crops or for park purposes are now being reclaimed, planted, and successful results obtained. In Balboa Park, San Diego, where tens of thousands of holes for trees have been blown out, involving the use of tons of dynamite, plant life shows a greater growth than when planted elsewhere under normal soil conditions. At the annual convention of the California Association of Nurserymen, John G. Morley, Superintendent of Parks in San Diego, was asked to describe methods and materials used in his reclamation work on large areas where there is practically no soil or where it is very shallow and underlaid with hardpan, adobe, cobblestones, etc., and where road plows attached to sixteen horses or traction engines could not tear up the "foundation of the World." We quote the following from Mr. Morley, trusting it may be of practical use to many, as the same methods and materials are being used in Los Angeles and elsewhere in the planting of gardens, street trees, etc.:

FAN PALMS ON THE GROUNDS OF THE TULARE COUNTY COURT HOUSE AT VISALIA

THE DATE PALM IS HARDY AND MAKES A MOST ORNAMENTAL POTTED PLANT

"When you stop to consider that the holes for two-thirds of the trees and shrubs in Balboa Park were drilled and blasted, cleaned out, and good soil and fertilizer placed therein before planting could be done; that even on large sections of the lawns the surface was shot before grading and seeding could be done; that over large areas closely planted to trees and shrubs, the whole ground was dynamited so as to provide for root action, you can readily see the expense of the work before results could be obtained. These conditions existed even in the area where the exposition will be held, and when you visit Balboa Park and the exposition grounds and see the results of the work, I am sure you will be surprised, for you will see hundreds of thousands of trees and shrubs growing luxuriantly in ground that was once impossible of cultivation.

"In our work we have used chiefly No. 2 dynamite, that is 40 per cent, having had better results than with the 25 per cent or by using black powder. We find that the 40 per cent shatters the ground better and there is not the tendency to fall back in place as with the 25 per cent or black powder. Hammer drills have to be used in most of the work, although we do sometimes strike a soft place that can be drilled with an auger. The holes for small trees and shrubs are drilled from three to five feet deep, according to conditions, and from two and a half to six sticks of dynamite used for each hole. This shatters the ground for about seven feet. After the blasting the hardpan and stone are removed, good soil and manure filled in, then flushed with water under pressure to fill all the spaces. After it is well settled the holes are filled to grade and the planting is done.

"When large trees, shrubs and palms have to be planted, it is frequently necessary to drill from five to eight holes from six to eight feet deep, and from 20 to 40 sticks of dynamite are used, all hardpan, etc., removed, good soil and manure placed in the bottom of the holes and these filled with water to settle before planting. This is expensive work, but has to be done to get the required results. Where all the area to be planted is blasted, the shots are placed about five feet apart each way. After shooting, the ground is plowed and the worst of the hardpan and larger stones removed, and the ground settled by sprinklers closely set, leaving them about an hour or more at each place. After a few days the area is graded and the planting done. Where new roads and walks are being built, whatever good soil is found therein is utilized on the planting areas, and the hardpan removed from the planting areas is used to surface the roads and walks."

Tree Peonies

Government plant explorers who have visited China readily declare that tree peonies (Paeonia moutan) should thrive in the semi-arid southwest where the herbaceous peonies so common on the eastern coast do not thrive except under special conditions. Local experimenters have found that a very deep and free sandy loam, with the addition of leaf mold, makes an ideal soil for this class of peonies and that if such soils are kept moist at all times, yet never wet, the tree peonies may be grown to perfection in local gardens.

Divide Perennials Now

Shasta daisies, phlox, and a host of herbaceous perennials are now past blooming and in a somewhat dormant condition and may be divided and reset. Last November the writer had many sorts moved and 200 young Shasta daisies were made from one dozen old plants. These latter started to blossom in February and kept up continuously until October. In eight years growth of these flowers, involving four removals, the plants have never before responded with such vigor, therefore it is evident that now is a splendid time to divide and reset.

Garden Millipedes

Millipedes, erroneously called "thousand-legged worms," are a great pest in any garden, for while they feed largely upon decaying vegetation they are not slow to attack any plant organism, more especially roots and bulbs. Where they are common it is better to poison them—if poison may be safely placed where children, domestic animals, birds, etc., will not come in contact—with a bran mash. Use a total of ten parts—one of Paris green, two of sugar, and seven of bran. shorts, cornmeal, or any old "breakfast food." To drive them from the soil use one ounce of bichloride of mercury in ten gallons of water. This will cause any worm or insect in the soil to move on to the next place.

Dwarf Cocos

The hardiest cocos palms we grow belong to the dwarf section, not to the lofty Cocos plumosa section of the family so popular throughout Southern California. These dwarf hardier types come from nearer the south pole than the plumosa section of the genus, hence are native to almost temperate climes. The correct name of the species used here is in some doubt. By some quite competent authorities it has been referred to Cocos eriospatha and may be a variety of that species but is not the type.

A most valuable paper on his experience and success in growing the potato was read by E. H. Phreaner of Placerville. He called attention to the importance of clean seed grown in high altitudes and outlined a plan for field inspection to produce healthy seed by eliminating the weak and diseased hills during the growing season. He also impressed the fact that commercial fertilizers must be used for maximum yields.

The fungous diseases of the potato were discussed by W. V. Shear, the government specialist in charge of the potato experiment station at Middle Island in San Joaquin County.

The fungus diseases, rhizoctonia and fusarium wilt, were described and good cultural methods urged as the principal control treatment. A University of California bulletin covers this topic fully, and any specially interested should apply to Director of Experiment Station, Berkeley, California, for it.

Wm. Garden, horticultural commissioner of San Joaquin County, discussed tuber moth, eel worm and other insect pests and assured the convention that their control was possible and would be accomplished.

The potato industry on the Pacific Coast certainly has a large and bright future.

Small Fruits Vegetables

THE SPECIAL POTATO PROGRAM

Written for California Cultivator
By Sacramento Valley Contributor

ANOTHER enthusiastic and surprisingly well attended potato meeting was held as a part of the big Fruit Growers' Convention.

Dr. Cook belives that the mission of the state commission of horticulture includes the care of the potato interests, and in him they have an able champion. As president of the West Coast Potato Growers' Association he is determined that everything possible be done to place Pacific Coast potato growing on the highly profitable basis that it will be when all of the problems connected with it are understood and under control.

It was particularly fortunate that Hon. E. H. Grubb, the great potato authority, arrived from Europe in time to take part in the potato session. In him Dr. Cook has an enthusiastic co-worker. He impressed upon the growers the imperative need of rotation of crops, preferably with the potato as a crop one year in a four, five or six year rotation, with grass and grain as alternate crops. He particularly emphasized the value of grass roots in maintaining the soil in a healthy condition for potato growing and cited instances in Europe where fields, in disease infested districts, have been kept clean for years by the sowing of grass immediately following the digging of potatoes and never growing a crop except on land where sod is turned under and worked into the soil in the preparation of the seed bed for the potatoes.

He also called attention to the fact that in Europe in the past four years practically all big successful growers are discarding late varieties that require a long time for maturing—say 120 or 130 days—for the earlier sorts that mature in 90 to 100 days after planting. This is because the longer the potato is in the ground the more chance for disease.

Another valuable lesson brought from Europe by Mr. Grubb is further testimony on the practice of using nothing but good-sized whole seed. Many of the best growers in England and Scotland use 2000 to 3000 pounds of seed to the acre as against 500 to 700 pounds of cut seed per acre as is the custom in many sections here. The whole seed, with an abundance of stored-up plant food, makes a vigorous, healthy plant and its planting far exceeds in result the planting of a smaller piece of seed. And where earliness is an object the seed is sprouted before planting, and a vigorous, well greened sprout developed before planting. The furrows are then opened out and the sun has a chance to disinfect the soil somewhat before the sprouted seed is dropped. Two to three weeks is gained by this start in sprouting over seed planted unsprouted.

"And with better methods and larger yields we will produce potatoes of higher quality," said Mr. Grubb—"all of which will cause our people to more greatly appreciate and use this great food crop. At present our people consume only two and one-half bushels of potatoes per capita per year, while in Europe the consumption in various countries is from five to ten bushels per capita."

BEAN GROWING

Written for California Cultivator
By H. Culbertson

I am asked to say something on this subject as applied to sections some distance from the ocean. El Cajon Valley, where the writer has had his experience, is less than 20 miles from the coast line. There is a range of hills about 1000 feet high between the valley and the coast, the valley itself having an average elevation of about 500 feet above sea level. In this locality we are subject to higher temperatures and less humid air than the coast. Bean growing has not proven profitable as a rule. The tests, however, have been on spring plowing just before planting. This has not proven sufficiently profitable to encourage a continuance of the business. The writer's experience is that we get moderate returns on pink beans when we use the same methods as the coast growers, that is, plow early in the winter and keep the ground well cultivated. Plant early and they mature before the real warm weather begins. This means to plant in March as a rule and grow without irrigation.

Beans do well with irrigation planted almost anytime. Early planting with one irrigation gives very good results. We would emphasize the early winter plowing and cultivation up to the time of planting. Give good cultivation after every rain, or if the ground gets well compacted replow it. This treatment retains a large part of the rainfall and stores available plant food to start the young bean plants with energy.

In a general way it has been our observation that the coast climate as it affects bean growing varies much in distance from the coast. If the coast has nearly an east and west trend, as in part of Ventura and Santa Barbara Counties, the peculiar conditions favoring bean growing reach much farther back from the coast than where the coast line is nearer north and south. They are also affected by the hills that may be high or low near the coast.

There is a locality in San Diego County where good corn is regularly produced without irrigation a few miles from the coast. In many other localities the same distance from the coast the same treatment would be a failure.

As one travels along the coast a great difference is observed in the long trailing moss that hangs on the trees. In some places in Santa Barbara and San Luis Obispo Counties the trailing moss hangs on the trees 15 miles from the coast, in other places it hardly grows even on the coast. Apparently it is largely a question of moisture in the air; if the air is humid and the temperature not too high the soil moisture is not exhausted. A dry air with extra heat exhausts the soil moisture beyond the limits for large yields without irrigation.

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J. H. HALE

One of the greatest pleasures of the convenion week just closed in Los Angeles was the meeting of such great minds as that of J. H. Hale, the peach grower. For almost a life time this man has been growing peaches. It has not narrowed him, however, for he is big and brainy, and with it all, modest beyond most men. This modesty prevented his giving notice to the peach which Parker Earle says is the greatest commercial peach yet produced, that is, the one bearing J. H. Hale's name. Mr. Hale in his address referred to the Elberta and the Belle of Georgia as being two of the greatest commercial peaches known today. From an eastern standpoint, perhaps from a California standpoint, he might well have put the Hale well before all others. Both of his addresses were listened to with most intense interest by all at the convention.

MORE DISCUSSION

Many times during the recent convention at Los Angeles did we hear requests for more opportunity to discuss questions brought out by addresses. The program was too full, and as a rule the addresses were too long. Had there been half as many we believe the results would have been better. It is not to complain that we write regarding the program, but to suggest changes in the future. So many questions come to the orchardist when he is facing big men that he wishes to ply them with questions, and from the interest taken in these proceedings we believe the attendants got greater help from the discussions than from the addresses themselves. Of course, it must be admitted that some with a hobby to ride will take advantage of such opportunities, and in endeavoring to ask a question present an argument almost as long as the address made by the speaker on the program, but these people may be easily called to order and the convention kept within reasonable bounds in such round-table discussion.

HARD WORKER

After a registration of some 1200 had been counted up at the State Fruit Growers' convention, those who had worked hardest in arranging for it and conducting it went home with a feeling of gratification, for it showed plainly that by long odds it was the largest convention yet held in the state. It takes much work to get such a convention into running order and see that all sessions come through on schedule time. But hard work is just what State Horticultural Commissioner Cook revels in. One criticism we heard of his manner of conducting the convention was that Dr. Cook was such a believer in hard work that he was holding us to it at the rate of 12 or 14 hours a day. The sessions began soon after 9 in the morning and there was practically a continuous performance until 10 or 11 at night.

Nor is this method of work confined to convention week, for we believe the entire force of the state horticultural commission is one which revels in long hours and hard work. The office at Sacramento was never on as good working basis and its documents and books so accessible as today.

LEGISLATION

The report of the committee on legislation which was made at the recent Fruit Growers' Convention, and which appears on another page, indicates only faintly the work done by the legislation committee. There are many conflicting interests which have to be harmonized before better legislation which will be acceptable to all can be suggested. The ochadists will have the largest interests at stake and will doubtless be the first to be heard in the matter. Nurserymen, who have been so seriously handicapped by the various and diverse ordinances passed by the different counties in the state, are sincerely hoping for some more uniform system of inspection and quarantine. The commissioners may be regarded in the light of servants working for the interests of the growers and nurserymen, but their work at law enforcement has given them an experience which is valuable and allows them the right to speak their views on proposed legislation. It is to be hoped that such a large number of bills will not be presented as at the last session of the legislature. There was such a mass of stuff that nearly all of it had to go to the waste basket. Growers should unite before the session is called, next January, and present the few measures necessary and bring pressure to bear that will give the growers of the state protection and opportunity to accomplish better results.

THE WOMEN'S SESSIONS

The women's sessions at the State Fruit Growers' convention were a success. This was evidenced by the eager questioning and discussion which followed each address. The questions were very much to the point, too, calling for practical help in details of work which proved obstacles to success. The speakers were able in many instances to give the help asked; if not, usually someone in the audience did. The sessions were live ones, business from start to finish. There was no suggestion of the Browning or futurist art club about them; what the women were interested in was accomplishment. They wanted to know how to accomplish the most, the best, and with leas' expenditure of time and labor—and how to make it pay.

We predict that future sessions will have more extended scope and bring in still more of the practical women who have done and are doing things.

Notes and reports of the women's sessions will be given in next week's and succeeding week's household department. This issue was too crowded with the special prize articles to find space for anything on the convention.

The meetings were conducted by Miss Lilian D. Clark of the agricultural extension department of the state university. The parlors of the Hotel Clark, where sessions were held, accommodated at least 150, and accommodations were taxed each afternoon.

CONCENTRATE

Just now the agricultural leaders of our state are giving serious thought to the condition of the affairs of the various associations that represent the different branches of the industry. We have a great many societies and commissions and other organizations, so many that the situation is confusing to many farmers and agriculturists who are coming to California from other states.

Agriculturally, we are in a state of evolution, in spite of the fact that we have been producing large quantities of good products for many years and that we have had societies, and meetings have been held for several decades.

California is a big state, of almost unlimited resources and variety of products. And greater intensive development is going on than ever before in our history.

We now have organizations representing almost every branch, and in some cases sub-branches of the various industries—and a wide range of activity in the organizations—from the busy, financially sound and fundamentally useful and necessary marketing organizations, like the citrus, walnut and almond associations, to the conventions that are poorly attended and supported.

In the first place an organization cannot be well supported or attended, nor can it live long, unless there is a real need for it and some definite mission for it to perform. In this state we nave many that have a real mission and are successful. But the meetings are held at different times and widely different places. This makes it difficult and expensive, both as regards time and money, for one who is interested in several different things to attend.

No one in touch with advanced agriculture questions the great good to be derived from an occasional "getting together" of those engaged in the same business or interested in the same line of work. It is offered in criticism of most agricultural conventions that a large part of the time is taken up by a discussion of "the same old subjects in the same old way," and while in some cases the point is well taken, there are always some of the big men in the business in attendance, and no one can mingle with a convention crowd and not learn much and be benefited in many ways.

Now the great question is—how can the various organizations and conventions be correlated and combined and condensed in such a way as to make it possible to derive the greatest possible benefit from them and still retain their identity and maintain and increase their usefulness in the districts where they are now located.

This is the problem that several of our great minds are now at work on, and we hope for recommendations that may be as nearly universally satisfactory as is possible.

FOOT AND MOUTH DISEASE

Live stock men in the United States have been aghast at the sensational spread of the foot and mouth disease in many of the greatest live stock sections of the United States. It is now located in more than a dozen states and Pacific coast stockmen are startled to find that it is reaching as far west as Spokane. This report, however, comes only as we go to press and we hope it will not be verified. States now under quarantine include Michigan, Indiana, New York, Maryland, Illinois, Wisconsin, Iowa, Pennsylvania, Ohio, Massachusetts and Rhode Island. From all these live animals (exclusive of horses) may not be shipped out. One of the serious phases last week was the discovery of many infected cattle in the Chicago stockyards, this hastening the order for entire cessation of receipts and shipments at that point. More than 7000 men have been thrown out of employment by the stockyards quarantine in Chicago. It is feared the scare may induce live stock people to throw half prepared stock on the market and break prices. The department urges that this be not done but that greater care be observed in moving cattle from sections which are not quarantined.

The former outbreak in this country was quickly suppressed by the department of agriculture, but the present one seems to have swept beyond all control and with such great rapidity that practically all the forces of the bureau of animal industry of the department of agriculture have been unable to cope with it. At first rumor said that the department was not doing as efficient work as was done some years ago, but practically all comment made now is that it is taking a strong hand and shippers even maintain that the quarantine is altogether too rigid. But that is impossible with such a dread disease. The effect upon the meat packing interests is temporary, but already some of America's best breeding blood has been destroyed, for the stock of some of the breeders who have given greatest attention to pure blood animals have been within the path of the disease. Packing interests and all breeders should aid in every way in the campaign that the department of agriculture is making.

Agricultural Notes

Over 76,000,000 pounds of raw sugar was imported from Cuba through Galveston, Texas, in the year 1914-1913.

The grapefruit crop of Florida is about normal. Much of the fruit is smaller than last year and is ripening slowly.

The United States is now receiving pineapples from the Azores as the European market has been closed to this product of the islands.

Agricultural News Notes of the Pacific Coast

Northern California

The olive harvest of the Anderson Valley, Shasta County, is unusually good this season, at least 40 per cent larger than last year.

Yuba County is increasing its citrus acreage by large plantings of both oranges and lemons, and nurserymen in that section are rushed to fill orders.

The Sonoma County Grape Protective Association is advising grape growers not to be in too great a hurry to make settlement for their 1914 crop.

The first shipment of Australian butter for the season, comprising in the neighborhood of 27,000 pounds, was received at San Francisco early in the month.

Registered Poland Chinas for the foundation of herds were recently bought by H. E. Wilson and P. R. Cox of Butte City, Glenn County, from A. M. Henry, Farmington.

As a result of early rains much plowing and seeding is being done in Stanislaus County. It is anticipated that some 3000 acres will be planted to alfalfa in the Oakdale district.

It is reported that the Hawkins dairy herd at Orland, in Glenn County, is producing better than $12.00 per cow per month. The cows are being fed alfalfa, rolled barley and oil meal.

R. C. and J. W. Jesse of Glenn, Glenn County, have three-year-old almond trees that produced 12 pounds of nuts per tree this year. Many almond trees are being planted in this vicinity.

A farm adviser for Glenn County is practically assured. James Mills of Willows, and G. H. Hecke of Woodland have recently addressed euthusiastic meetings, and farmers all over the county are joining the farm bureau.

The 80-cow herd of Holsteins recently brought to the Delevan tract of the Sacramento Valley Inrrigation Company from Wisconsin by the Roeber Company is doing well in its new home. At the head of the herd is a bull from one of the best herds in the east.

Aralia de Kol, world's champion 12-year-old milk and butter producing cow, has died of milk fever. This Yolo County Holstein was the first cow in the world to produce over 28,000 pounds of milk in a year, and was the first 12-year-old to give 1142.32 pounds of butter. The performances were accomplished in 1912.

Last year's rice crop in California was 150,000 bags of 100 pounds each, valued at $300,000. The 1914 crop is now being harvested. It is estimated that it will amount to between 550,000 and 600,000 bags, worth about $1,250,000. The farmers are having some difficulty in financing their crop and in finding sufficient storage room.

Yolo County is becoming a decided factor in the alfalfa seed production of the state. One shipment recently made to Central and South America by way of the port of San Francisco aggregated over $10,000 worth of seed. This is the largest shipment of seed made from Woodland in many years. The growers received an average of 10¾ cents per pound.

Central California

Government forest rangers will carry on a vigorous fight against the pine beetle throughout the winter.

The Woodlake section of Tulare County has had a good crop of chestnuts this year which show exceptionally fine quality.

The Terra Bella Fruit Growers' Association has sent out its first shipments of canned tomatoes labeled as Terra Bella pack.

A two-year-old Holstein heifer, Stratford Lazon De Kol 2nd, was sold at the Hanford fair for $1,000 to J. G. Fakes of Patterson.

Farmers of Hickman and Waterford districts in Stanislaus County met recently for the purpose of forming a branch of the farm bureau.

Acording to the annual report of the directors of the Fresno County Agricultural Association the district fair this season realized a profit of over $2,000.

The shearing of 100,000 sheep has just been completed at Waterford, Stanislaus County. It is estimated that 50,000 sheep are held awaiting better prices for wool.

Estimates made of the coming orange crop of the Tulare district place it at 5000 cars. The crop is not so heavy on the trees as last season but the new acreage just coming into bearing will bring up the total to practically the same as that of the season just closed.

The annual meeting of the Lemon Grove Fruit Growers' Association was held on Saturday, October 31. The following directors were elected: T. F. Bryan, C. B. Vogdes, John Campbell, Wm. M. Doubleday and H. S. McLean. The manager of the association is A. V. Jester.

The Associated Raisin Cmpany has issued a statement of its financial condition up to September 30, showing the company's total assets as two million and a quarter. Manager Madison reports the marketing very satisfactory considering the weak demand for other dried fruits.

Monterey County potato growers met at Salinas recently to consider the organization of an association and adoption of a label or brand for Salinas Burbanks. The immediate occasion for this action was the circulation of reports that inferior potatoes from other sections were being marketed as Salinas grown.

The girls employed at the Fresno Fruit Growers' packing house struck for increased wages recently. They claim that on the basis of four cents a crate they could only make from 60 to 75 cents a day, owing to poor condition of the fruit. They particularly found fault with the poor quality of Emperors, which necessitated much sorting.

The West Coast Potato Association was formed at the recently held Emergency Potato Convention at Stockton. State Horticultural Commissioner A. J. Cook was elected president and Wm. Garden of Stockton, secretary. An invitation is extended to potato growers of Oregon, Washington, Idaho, Utah, Nevada and British Columbia to join the association.

Southern California

Ventura County estimates her bean crop at a million and a half sacks.

Beekeepers suggest as an addition to "Buy a Bale of Cotton," "Buy a Can of Honey."

Walnut deliveries in the Santa Ana district are practically finished. One hundred and twenty-nine carloads have been shipped to date.

The Southern California Sugar Company's plant at Santa Ana has just finished the season's run, showing a total of 50,000 tons of beets.

The Pomona district disposed of the last of its Valencias the last week of October. In some seasons all Valencias have been marketed in this district by the first of October.

A canvass is being made of beet growers of Talbert, Artesia and other beet growing districts of Los Angeles and Orange County to induce them to grown their own sugar beet seed.

At a meeting of the West Coast Potato Association held at Stockton the following officers were elected: President A. J. Cook, vice president I. L. Borden, secretary Wm. Garden.

Clexico is sending out a call for cotton pickers. Two thousand will be needed to harvest the crop. Inexperienced pickers, however, will not make more than a dollar a day until they become accustmed to the work.

The Hemet Fruit Association shipped 30 tons of cured fruit to Havre, France, last week. This is the first foreign shipment made by this association this season and was sold subject to payment before leaving New York.

Dr. Webber of the Riverside Citrus Experiment Station addressed the Pomological Club of Claremont at its meeting last Saturday. His subject was the fertilizer experiments which have been in progress at the Riverside station.

The Hog Raisers' Association of Imperial Valley met at Holtville recently for the discussion of problems pertaining to that industry. A representative from the bureau of animal industry gave a demonstration of the method used in hog vaccination.

Refrigeration rates on carload shipments of deciduous fruit from California points to Denver, Chicago, New Orleans, Kansas City, St. Louis, Philadelphia, New York and common points have been declared reasonable by the interstate commerce commission.

California bee-keepers have just completed gathering the 1914 honey crop. According to the bureau of crop estimates of the United States department of agriculture, the yield per colony of bees was 75 pounds. In 1913 the production per hive was 36 pounds.

Los Angeles bankers will raise a pool of $500,000 to alleviate conditions affecting the cotton raising industry of Imperial Valley. The Los Angeles bankers declined to cooperate in the national movement because they considered they had a local situation to face, and that the interest of the Imperial Valley cotton raisers should demand first attention.

The Coast

Farmers of Chandler, Arizona, are going to experiment with plantings of sugar cane this year.

Berry growers of Opportunity, Washington, are discussing the erection of a box factory.

Hop growers of Oregon, Washington and California plan to form a Pacific Coast Hop Growers' Association.

Thirty thousand head of cattle will be shipped from the Pecos Valley of New Mexico during early November.

The attendance at the college of agriculture of the university of Arizona is 30 per cent larger than last year.

Greenacres, Washington, is a center where are being assembled carloads of apples to ship to war sufferers in Belgium.

Oregon's minimum wage law will be brought before the supreme court on December 7 for decision as to its constitutionality.

The agricultural demonstration train conducted by the university of Arizona in cooperation with the railroads will soon start on its fall trip.

From North Yakima, Washington, comes the report that thousands of boxes of apples that in an ordinary year would be marketed will not be picked.

The North Pacific Fruit Distributors has received over $1,000,000 from the central selling agency from collections made on the first cars of fruit shipped for the season.

Shipments of cattle from northern Arizona are now admitted to Mexico without health inspection. This is owing to the careful work of the state veterinarian of Arizona.

The Yakima Valley of Washington is now shipping out 400 to 500 carloads of apples per week. This movement, it is expected, will soon end and buyers will devote their energies to disposing of the enormous holdings now in storage.

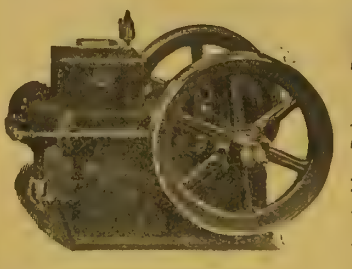
By a recent ruling of the bureau of chemistry potato growers and firms handling potatoes will not be compelled to weigh and tag each bag before shipping, this because of the practice of selling the potatoes by weight exclusively and not by sack.

The fourth annual Pima Indian fair is being held at Sacaton, Arizona. The Indians are taking a greater interest in the fair this year than ever before, and their exhibits are said to be of a quality that will make some of their white brothers sit up and take notice.

The agricultural extension service of the University of Arizona is endeavoring to interest dairy farmers in testing their cows to find out which pay and which do not. It is estimated that for only 15 cents per cow per month farmers can have accurate tests made.

A cider mill in the Hood River Valley of Oregon will this fall undertake to manufacture and test on the retail market 1000 gallons of concentrated cider. Experts of the United States department of agriculture have perfected a method of concentrating cider to one-fifth its usual bulk without destroying its fresh flavor.

The MASTER Engine



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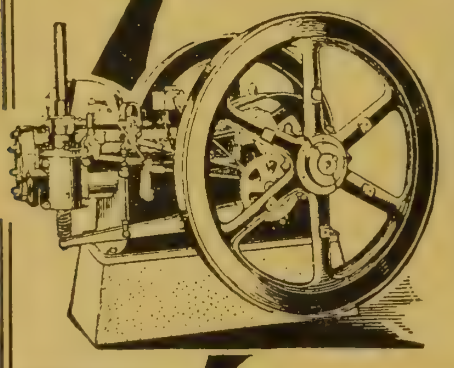

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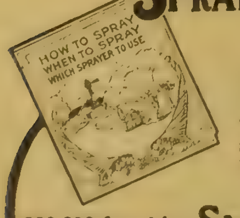

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Live Stock and Dairy

FOOT-AND-MOUTH DISEASE SPREADS

By Richard Hamilton Byrd

THE experts of the bureau of animal industry of the department of agrculture are concentrating their efforts on the suppression of an epidemic of foot-and-mouth disease among cattle, the spread of which has been so swift as to prompt federal quarantine against shipments of cattle out of ten states—New York, Pennsylvania, Maryland, Ohio, Indiana, Illinois, Iowa, Massachusetts, Michigan and Wisconsin. All interstate as well as intrastate shipments of cattle, hogs and sheep in these states are absolutely stopped by the agricultural department's quarantine. Doubtless other states will be found to have infected herds, and if so they will be quarantined. At this writing cases of diseased cattle at Como, Mississippi, are suspected of being the foot-and-mouth disease, and are under investigation. The presence of these suspected cases became known through a letter addressed to the secretary of agriculture. The owner of a herd at Como stated that for some time his cattle had been afflicted with sores about the mouths and hoofs, and in treating them he seemed to have contracted the disease himself. The symptoms given were those of foot-and-mouth disease.

The seriousness of the epidemic of the foot-and-mouth disease and the necessity for use by the department of agriculture of funds set aside for other purposes have been laid before the president by Secretary Houston. The secretary told President Wilson that, as a result of the epidemic, it will be necessary to increase the estimates of expenditures for the department now being drawn up and which will be sent to congress next month. He said the department believed it was in control of the situation, and that the food supply would not be very seriously affected.

Even if no further areas are added to the quarantined section, it will cost several million dollars to stamp out the disease, since the only effective method is to kill and bury or burn all affected animals. The indirect loss, however, will be much greater. Only the most drastic measure of immediate slaughter gives any hope of eliminating the disease, even rigid quarantining but partially checking its spread, since the germs may be carried by animals and even pigeons to a distance of scores or hundreds of miles.

The foot-and-mouth disease is practically unknown to American stock raisers, therefore it has not been generally recognized, which accounts for the foothold it has gained; nevertheless, the foaming at the mouth and the ulcers appearing on the udders and feet of the animals attacked are unmistakable signs to those aware of the presence of the disease in the United States, and the secretary of agriculture urges the immediate report to him of any suspected animals or herds. Indeed, prompt action in such cases, even if involving a pecuniary loss to the farmer or the shipper, rises to the height of patriotism since the general spread of the disease would be a tremendous national calamity. In a former outbreak of the disease in Massachusetts and New Hampshire failure to report the malady and the evident intention of some of the people to conceal it resulted in greatly prolonging the period of quarantine and rendered the work of eradication by the government much more difficult. With the present widespread prevalence of the diease such a course would probably result in its getting beyond possible control. In such an event, it is stated, the present high price of meat would not be a marker to what could be expected. Secretary Houston therefore urges every good American to report at once, by telegraph if possible, any case of supposed foot-and-mouth disease. In case of the slaughter and destruction of animals the federal government and the states pay the owner the full meat value for his animals as if in good health.

Protests of cattle owners against the rigid enforcement of the preventive measures were answered by Dr. S. E. Bennett, chief of the inspection force of the bureau of animal industry at the Chicago stockyards, by the statement that the slaughter of infected animals at a cost of $10,000,000 would be cheaper to owners of herds and the packing interests than a general spread of the disease, with the vastly larger loss it would involve. The death rate ranges from 2 to 30 or 40 per cent, with great variation in the violence of the epidemic, but the average loss to the farmer through the crippling and deterioration of the animal attacked is placed by the department of agriculture at 50 per cent.

The latest appearance of the foot-and-mouth disease in this country was in 1908, when small areas in New York, Pennsylvania, Maryland and Michigan were affected. To stamp out even this restricted epidemic involved the expenditure of nearly half a million dollars and the unremitting efforts of 575 employes, of whom 159 were veterinarians. The task today is far heavier, and if the department of agriculture can kill the present epidemic it will justify its existence many times over.

PLACE FOR SHEEP ON THE FARM

As the sheep breeding season is now opening, the United States department of agriculture urges the desirability of maintaining a small flock of sheep upon the farm. With proper care and attention, a flock of 25 or 30 ewes can be kept at very little expense, and they will prove of inestimable value in freeing the farm from weeds and adding something to the farm income. In addition to providing a considerable supply of delicious wholesome food for the farm table, there will be a surplus for sale and an additional item of revenue in the form of wool.

Many farmers make a practice of buying ewes in the fall, breeding them and selling the lambs the following summer. Such ewes can be carried through the winter on wheat and rye fields if not pastured too closely, or on clover hay with some roots and a little linseed meal. If the clover hay is not available, corn fodder may be used as roughage, in which case it should always be supplemented with bran or linseed meal. Lambs should come early and should be taught to eat as soon as they are old enough. Give lambs access to corn by providing a creep through which they can go without allowing the ewes to follow.

Ewes can be purchased at the present time at prices ranging from $3 for common, inferior sorts to $7 for good fairly well-bred ewes. For farm purposes the black-faced ewes are more popular than the others, although good results can frequently be obtained from the white-faced ones. In buying ewes, be sure that they stand well on their feet, have good straight backs and good mouths. Ewes that have broken teeth, or teeth that are badly worn down should not be bought. As a rule, a sheep has one pair of permanent incisor teeth when it is one year old; two pairs when it is two years old, and three pairs, or a full mouth, when it is three years old. A fullmouthed ewe, if the teeth are in good condition, can be used for breeding with good results, although she may be as much as five years old. Never buy a ewe that has a broken mouth, that is, with teeth that have been broken off or lost.

None but a pure-bred ram should be used. It is not necessary to have a show animal, but a strong, vigorous buck is essential. Shropshire, Oxford, Southdown, and Hampshire rams sire excellent mutton lambs, and these breeds are recommended for the farm states. A suitable ram can be bought for $8 to $20.

The two principal drawbacks to the sheep industry in the farm states are dogs and stomach worms. The dog nuisance can be obviated to a great extent by placing dog-proof fences around the pastures. The United States forest service has had excellent results in protecting sheep from coyotes and wolves by building fences constructed in the following manner: A barbed wire is first stapled to the posts right on the surface of the ground. Three inches above this is placed a panel of close-woven wire, 36 inches high, and above this two strands of ordinary barbed wire. Care should be taken to see that there are no openings between the ground and the lowest barbed wire. An inclosure made in this manner, into which sheep may be turned at night, is inexpensive, and dogs will not get through it. Most of the damage by dogs is done at night.

The presence of stomach worms is a very serious drawback. The young lambs become infested with them by eating grass to which the worms have attached themselves, the eggs being deposited by the mature sheep. It is therefore desirable to keep the lambs on land on which the mature sheep have not run, and if possible, in cases of bad infestations, to keep the lambs away from the mature sheep as much as possible.

In the farm states, the farmers will find it to their best advantage to regard the wool from the sheep as a by-product, and direct their principal attention to the production of lambs, and mutton for the table.

CARE OF HOGS AT VACCINATION

Bad results sometimes follow improper or careless methods of handling and feeding, both prior to and immediately after vaccination, in spite of the fact that clean, potent serum and fresh, uncontaminated virus were used. Among the things that can be done to contribute to good results are the following:

Feed the hogs moderately for 24 hours before vaccinating. Do not fast them, as this will cause them to be wild and hard to handle.

During hot weather, vaccinate early in the morning or towards the evening, rather than in the middle of the day, when it is hot.

The hogs should be kept in a clean, dry place before vaccination. This is better both for the hogs and for the persons who are to handle them.

If possible, group the hogs according to size. This will lessen the chances for error in estimating the doses of serum to be injected.

Provide a box or table on which to place the bottles of serum and virus, disinfectants, syringes, etc., where they will be convenient but not likely to be upset.

It is even more important that the hogs be kept clean and dry after vaccination, to reduce to a minimum the chances for infecting the needle wounds.

Get the hogs into an enclosure where they can be caught without chasing them. This should be done before the arrival of the veterinarian.

Special attention should be paid to the feeding of the hogs after vaccination. Corn should be excluded from the diet entirely for at least a week. Give reduced rations of slightly laxative feeds.

Watch the hogs carefully for at least three weeks after vaccination, especially if the double treatment has been used. If all goes well for three weeks, there is little to be feared later on.

If any hogs show signs of sickness following the double treatment, they should be isolated from the rest of the herd. Sometimes another dose of serum will save them.

If an abscess forms at the point of injection, it should be opened promptly and given a chance to drain. Very few abscesses should occur, however, if the foregoing rules are followed. —H. Preston Hoskins, Assistant Veterinarian, Minnesota University Farm.

STERILIZING MILKING MACHINES

By Lois W. Wing, Cornell University

Milking machines are expected to deliver milk free from dirt and bacteria, but in practice this result is not possible without considerable attention to the cleaning and sterilization of the machine.

The present experiments were arranged to test: (1) the efficiency of machines in producing a high grade of milk, and (2) the amount of care necessary to keep the machines in a sterile condition.

The first experiments were conducted at a laboratory and a farm near Little Falls, N. Y., in 1911. The stable was whitewashed and had a plank door, whilst the feeding alleys, mangers and gutter were of cement. No unusual care was given in keeping the stable and cows clean.

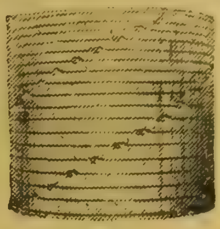
The sterilization was carried out by various methods, using brine, alcohol, hydrogen peroxide, potassium permanganate, copper sulphate, acetic acid, and hot water as germicides. Samples of milk were taken for bacterial counts each night.

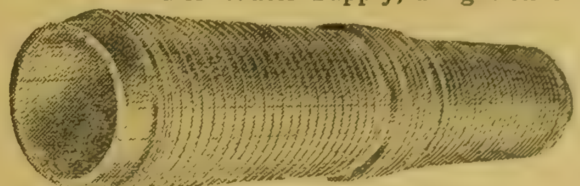
As a result of the experiments the writer concludes:

1. Brine solution, as generally used for the treatment of rubber tubes and teat-cups, does not keep them in a sterile condition.

2. Although the milking machine excludes external contamination to a marked degree, the milk may still have a high bacteria count owing to contamination in the tubes.

3. The rubber tubes and teat-cups may be kept in a practically sterile condition by the use of a salt solution containing chloride of lime.





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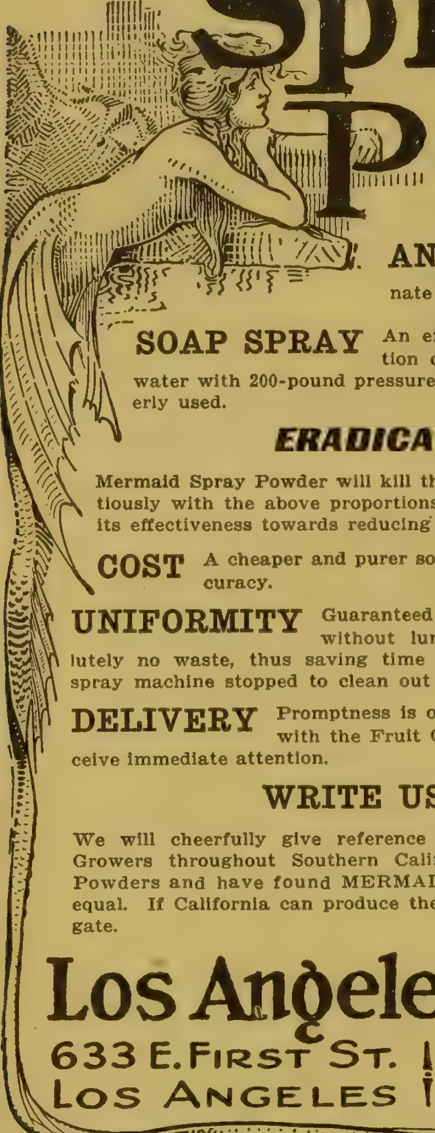

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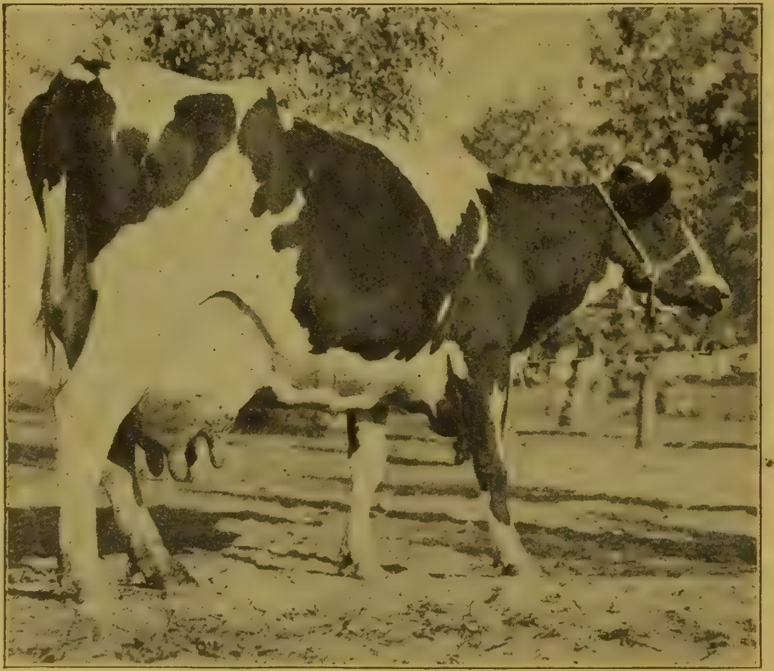

Another One of the Many Good Ones

BUY THE BEST and BREED THEM BETTER

85 — Registered Holsteins — 85

Geo. A. Smith's 5th Sale of Registered Stock

Corcoran, Cal., Saturday, December 12, 1914

HOLSTEINS THAT SATISFY. Cows with Records—Heifers Fresh and Coming Fresh—Yearlings, Calves and Bulls. GOOD WISCONSIN HOLSTEINS that produce Milk and Butter in Paying Quantities. REMEMBER the animals in This Sale have been sired by 28 different sires, each one a Good One. Look over the partial list of sires and grandsires appended and arrange now to attend the BIG SALE where Holsteins, combining TYPE-PRODUCTION and PREPOTENT BLOOD, will be sold at Bidder's Prices.

KING SEGIS, HENGERVELD DE KOL, DE KOL 2D'S BUTTER BOY 3D, SARCASTIC LAD, JOHANNA COLANTHA LAD, JUDGE HENGERVELD DE KOL, PONTIAC HENGERVELD PARTHENEA, DUCHESS ORMSBY PIEBE BURKE, JESSIE MAIDA PAUL DE KOL BURKE and other famous sires will be represented by their Sons, Daughters, Grandsons and Granddaughters. Don't fail to get some of these REAL HOLSTEINS with TWO GOOD SIDES TO THEIR PEDIGREES, and make yourself and your herd famous. Sell some of your Boarders and get some MONEY MAKERS.

WRITE AT ONCE FOR SALE CATALOGUE. IT WILL TELL THE WHOLE STORY. GEO. A. SMITH, Corcoran, Cal.

4. The chloride of lime solution should be made fresh at frequent intervals to effect complete sterilization.

5. If the machines are kept in a sterile condition, it is possible to obtain milk with low bacteria count.

Veterinary Queries

Answers in this column by Dr. Wm Petrie, 2714 South Harvard Blvd., Los Angeles, are without charge. For immediate mail answer remit $1.00. In writing questions give full symptoms or particulars of injury of animal.

Contagious Abortion

Can abortion be cured, and if so how and in what length of time? Is there any way to prove conclusively that an abortion is of the infectious kind and not the result of an accident? Would you advise selling a cow that aborts to the butcher or treating her, the cow being valuable and profitable? Can calf scours (infectious) exist in a herd free from abortion?—Subscriber, Irvine.

Contagious abortion is caused by a germ that lingers about the genital organs of both male and female. The only way to determine conclusively that an abortion is caused by infection and not by an acident is by the use of the microscope and finding the germ. But should it occur too frequently in a dairy one might safely conclude that it was of the contagious kind without using the microscope. By diligent care and treatment a herd should be freed from the disease in a year or perhaps half that time. We would not advise selling a good cow on account of abortion. The one you would buy to take her place might be no better. The treatment for abortion can not be fully given in the space allowed in this column, but briefly, it consists in destroying the foetus and afterbirth by burning it, washing out the stable with strong lime water and once a day, for a week, washing out the uterus and the surrounding parts of the cow with some good antiseptic solution, as one part of bichloride of mercury or permanganate of potash to one thousand parts of water. Internal remedies are of no use in these cases. The bull should also be treated to stop the spread of the disease. The infectious calf scours is due to an entirely different germ and may or may not be present where contagious abortion is known to exist, or may be present at any other time.

Sore Mouth

Have a four-year-old Jersey cow which has a number of red pimples on the upper surface of the tongue. When not eating she spends considerable time in working the tongue in and out of the mouth as though it might be itching. She is especially active this way after licking herself.—Subscriber, Ontario.

Probably the trouble is Mycotic stomatitis which comes from eating food that has a fungus on it caused by dampness. It is only seen in the fall after the first rains. It may get much worse and affect the skin above the feet where they get damp from walking through wet grass. When it gets bad it acts very much like the foot and mouth disease that has broken out recently in the eastern states but it does not spread as that does and is less dangerous to other animals. If you have other cattle it will be best to move them into other pastures and put the ones affected in a dry corral and feed them soft feed that will not irritate the tongue. Be sure they have plenty of water to drink. Twice a day swab the mouth with a solution made by putting a pound each of alum and borax in a gallon of water.

Tail Switching

About two months ago my driving mare begun switching her tail. What is the cause and what is best to do for it?—Subscriber, Bachelor.

It may be due to pin worms in the

(Continued on Page 506)

THE BEST LINIMENT

OR PAIN KILLER FOR THE HUMAN BODY

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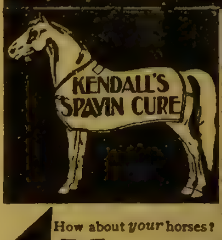

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Dr. B. J. Kendall Co.
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County Horticultural Commissioners

State Association Holds Interesting Sessions in Los Angeles

THE county horticultural commissioners of California have maintained a state association which for several years has aided in more effective work in practically every county of the state. Membership in the association is practically necessary for each commissioner, and once or twice each year this association is called to meet in conjunction with the state fruit growers' convention. All but two or three of the commissioners were at this year's session, which was of greater interest than usual because of its preceding the session of the legislature and the fact that fruit growers and commissioners have for the past two years been discussing legislative questions. Of course, there were extended discussions as to methods of enforcing present laws, and best methods of quarantining and watching after the interests of each commissioner's county, but the greater interest centered around the resolutions regarding legislation. A special committee was appointed by the commissioners to act in conjunction wtih the general legislative committee.

The special committee reported as follows:

Report of Special Committee on Legislation

This committee recommends:

First. That measures be taken to secure greater uniformity in quarantine and inspection regulations relating to shipments of nursery stock and horticultural products.

To secure this result we recommend the following addition to the law relative to the duties of the state commissioner of horticulture:

To prevent the introduction and spread of pests and diseases from place to place within the state, the state commissioner shall be empowered to divide the state into such districts as may seem necessary in his judgment for the prevention of the spread of various pests.

Such districts may be different for different pests. Such districts need not necessarily follow county lines.

The state commissioner shall make regulations governing the quarantine or the shipment and inspection of agricultural and horticultural products and plants in transit, either from one district to another district, or from one place within a district to another place within the same district, and shall issue such instructions to the county horticultural commissioners and quarantine guardians in such districts or parts of districts for the enforcement of such regulations.

Second. We recommend that a bill be framed providing for the control of the ground-squirrel pest and that such control be made a part of the duties of the county horticultural commissioners, under the direction and jurisdiction of the state commissioner of horticulture.

Third. Inasmuch as there is a possibility of legislation relative to agricultural and horticultural state commissions, which will take time to install and arrange and to test out in operation, we recommend that for the time being, and for a period of at least two years, no fundamental changes be made in the status, or mode of appointment, of county horticultural commissioners.

Additional Clause.—There shall be a standing legislative committee appointed by the County Horticultural commissioners for the purpose of investigating any defects in the present methods of the organization and to make suggestions for the betterment of the service. Frank T. Swett, William Garden, A. E. Bremner, C. W. Beers, W. Woods.

The above resolutions were referred directly to the larger legislation committee.

In addition to the serious business of the convention various commissioners visited Whittier and other nearby sections.

One proposition is to concentrate all of the state commissions—horticulture, dairying, veterinary, viticulture, etc.—under one head, in an organization similar to the United States department of agriculture and headed by a commissioner of agriculture. This plan is in practice in some states, and has many advantages. Much would depend on the caliber of the commissioner, who must be big and broad, and it would be hard to get a suitable man to accept if the position were political and the tenure of office subject to as frequent change as the governorship.

An excellent plan for conventions and the transaction of other agricultural business has evolved in Wisconsin, and it might or might not work out here. The meetings of practically all of the state organizations are held at about the same time each winter at the capital city, Madison.

The ballot for officers for the coming year resulted in the election of William Wood of Los Angeles County as president of the County Horticultural Commissioners of California, with C. W. Beers of Santa Barbara County, vice-president, and O. E. Bremner of Sonoma County, secretary and treasurer. These officers will serve until the close of the convention next year.

LIVE STOCK SANITARY ASSOCIATION

The eighteenth annual meeting of the United States Live Stock Sanitary Association is postponed. Many federal and state officials are engaged in controlling foot-and-mouth epidemic, consequently your executive has agreed it is best to hold our meeting later than dates originally announced. Notice of new dates will be given as far in advance as possible. John J. Ferguson, secretary-treasurer.

A machine in the shed is worth two in the weather. Where is yours?

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From the first selection of good seed for the seedling, and the growing of the seedling under the care of experienced men, in soil adapted to its culture, through the whole process of budding and up to the point of delivering to you a perfect tree in perfect condition, Roeding's service means protection for the planter. But we serve our patrons to a still further extent. Please note carefully.

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Coulson's Egg Food is not a stimulant—it is a food, and as such acts as an AID to egg production.

By insisting on Coulson's Egg Food—by refusing substitutes—you will be paving the way for a good yield from your flock, and at the same time giving your birds the VERY BEST at no additional cost.

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Poultry for Profit

THE SIDE-LINER'S SEVEN SINS

Written for California Cultivator

By Jean A. Koethen

FORTUNATELY no poultry keeper commits them all, but one is enough to cut down his profits, two may turn his feet into the path of those who never are, but always hope to be, and three—well, one doesn't wish to generalize too much, but the chances are that any three of these short-comings charged to the account of one man would be conclusive.

There are three kinds of side-line poultry keepers:

The man (more often it is a woman) in city or country who keeps a nice, thrifty flock of pure bred hens, cares for them when he can spare a few minutes from his real vocation, sells hatching eggs in season, and "extra" market eggs the year round, and salts down a nice little profit at the end of the year. I visited such a plant as this a few weeks ago. On a single half-acre a young man who is employed from eight o'clock till five keeps from 300 to 400 hens of two standard breeds. Theoretically he would do better with one breed, but he keeps each breed by itself, and seems to be very successful. His buildings are up-to-date, his runs immaculate, his scratching pens full of clean straw. His energetic young wife looks after the incubators and young chicks; they have always a string of fine birds in the show, and they told me they sold 3000 baby chicks last year. This is your real "little lander," but he does not pretend to get a living from his half-acre.

The farmer or back-lotter who keeps hens in the hope that they will pay, but who does not understand the fundamental principles which under-lie the building up of a profitable flock. This kind of poultry keeping is far too common the country over. It is due partly to the fascinating uncertainty of Mrs. Biddy's performances, partly to the dissemination of untrustworthy literature, which, in spite of successive lean years, still calls attention to the immense profits to be made by keeping a few hens in the back yard.

The man or woman who keeps hens without expecting them to pay. It is surprising how many there are in this class. They keep hens because they have always kept them, or for the sake of the fresh egg for breakfast and the Sunday fryer, or just because they like to have them around, all good reasons, but they might as well make them pay while they are at it.

The keeping of poultry is naturally and fundamentally a side line. The busy little hen seems just adapted to filling in chinks of one sort or another, especially on the farm where she can pick up her living and bother nobody. Robinson says in Chapter 3 of "Principles and Practice": "Probably over 90 per cent of all the poultry sold in the United States is produced by poultry keepers who do not make a business of poultry culture, but keep poultry on a small scale while giving their attention chiefly to some other occupation, usually general farming. . . . The staple factor in production is the farm flock, the produce of which is largely profit. The spectacular large enterprises rarely last long, and their nominal contributions to poultry production often represent only a waste and loss of money earned in other occupations.

"Permanent poultry culture is a branch of agriculture. This fact the poultry keeper and the student of poultry matters alike should ever keep in mind. It is fundamental."

I quote these words of Mr. Robinson in order to make it quite clear that while many poultrymen are successful as specialists, the great bulk of poultry products is produced by side-line poultry keepers, and that among these side-line poultry keepers the farmer stands first. This has always been true in the middle west. It has not been true in California, but it will be if the farmer sees his opportunity. The general farmer who has land for growing grain is in a position to raise poultry far more cheaply than can the specialist who raises only his green feed. A well-known eastern expert author of several books said a few weeks ago, speaking of the rise in feed prices:

"One thing is certain, more poultrymen will raise their feed, or at least a part of their feed, next year than ever before. There are two ways, and two ways only, to make money on hens. The first is, to get a fancy price for the product; the second is to raise all or part of the feed."

Here is the general farmer's opportunity. He has the land. He can raise all or part of his feed. All he needs is better methods, better equipment, better hens.

The specialist succeeds because he must. His living depends on it. He dare not neglect one jot or tittle of all the wearisome details which make up the day's round. His mind is on his work. His heart is in it. He is Johnny-on-the-spot because he must be. The side-liner fails very often because he doesn't care. A few cents more or less doesn't matter. In short we may write at the head of his list of special and fatal sins.

A Low Aim

"Hitch your wagon to a star" is a mighty good rule for anyone. It is a particularly good rule for the side-line poultryman, for if he does not aim high he gets nowhere. A flock of purebred, healthy, paying hens is a fine aim for the farmer. They will consume the waste of the farm, pay the grocer's bills, and buy new spring bonnets all round for his wife and daughter. It is an equally good aim for the back-lotter. Why should any man or woman keep a disreputable lot of mongrels "just to provide fresh eggs for the table," when they might have the same number of fine, beautiful fowls, producing eggs for the table with a surplus for the neighbors and hatching eggs to sell when market eggs are cheap?

Carelessness About Lice and Mites

This is the rock on which many a promising side-line business is wrecked. A correspondent wrote me the other day: "Do most people bother to dust for lice? Does it pay?" I had

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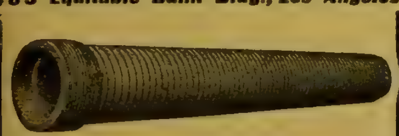

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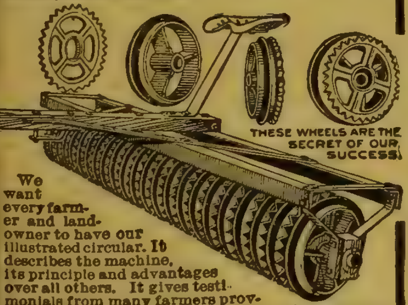
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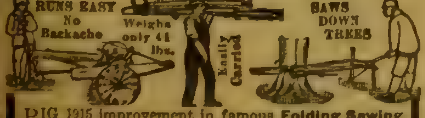

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to reply that I was afraid a great many people did not "bother," but I was very sure it would pay if they did. I don't suppose a few lice do much harm, except to baby chicks, and I fancy there are very few flocks that are entirely free from these pests, but a great many lice will certainly interfere with a hen's comfort, and that means interfering with her productive powers, for nobody, hen or human, can work to advantage unless he or she is reasonably comfortable. As for mites, they are often called the worst handicap of California poultry keepers and may always be expected to infest and annoy unless steps are taken to circumvent them. No matter how clean or new your houses are they will always find them if steps are not taken to keep them out.

Keeping Too Many Breeds

The average side-liner goes from breed to breed looking for one he likes better, and keeps a few of each, I suppose for purposes of comparison. If he happens to strike an extra good strain of Rocks, then he avers and declares that the Rocks are the best layers ever and he'll have no other. If his best layer happens to be a Red or an Orpington, he swears eternal allegiance to that breed. As a matter of fact, we all know perfectly well that there are excellent layers in all breeds, and laying is a matter of strain and not of breed. The man who has Barred Rocks and is not satisfied with them should hunt up a better laying strain or else improve the one he has. He will get ahead much faster this way than by changing breeds. As for keeping several breeds at once, this is a very troublesome matter and hinders the development of any one of them. The man who hatches 200 Barred Rocks in a season ought to be able to select 20 pretty good ones for his next year's breeders. Fifty each of three or four different breeds gives him a much narrower choice.

Haphazard Methods

Haphazard breeding, haphazard feeding, hit-and-miss raising of chicks, this is what is keeping the poultry industry down, and everybody who raises any chickens at all is part of the great billion-dollar poultry industry. Why breed from the whole flock instead of selecting the hens which are really worth while? Why permit the eggs to be fertilized by a cock that a neighbor is willing to sell for a dollar, instead of sending to a scientific breeder for a bird that will improve the stamina and production of the flock? Why feed corn when you know corn is too fattening for the regular diet of hens anywhere, let alone in a warm climate? Why hatch chicks under mite-infested hens or raise them in diarrhoea infected brooders? Why let your hens get sick when a little attention to sanitation and feeding will keep them well? There is only one reason. Too much trouble to do the thing the right way. If poultry culture is anything at all it is a science and must be gone about scientifically. There are many right ways of doing the same thing, usually, and they are not hard to find.

Beginning Too Large

A large beginning often makes a sudden and discouraging ending. The victim of "chicken fever" thinks that if he can only fill his pens with chickens he will be a real poultryman. Too late he finds that it costs a dollar to raise each hen to maturity and that she is not always prompt about repaying the dollar. When I made my first ill-omened attempt to raise a lot of incubator chicks, a sympathetic neighbor consoled me with the remark, "Well, at least those that are not alive are dead." "You mean, those that are not dead are alive," I replied, not understanding his trenchant witticism, but more than once since then I have been glad when I had hatched too many chicks, that at least those that had died were dead and out of the way.

Overcrowding

Probably no one thing is more fruitful of evil results in the hen yards than overcrowding. Whether it is young chicks, half-grown stock, laying hens or breeders, the same care must be exercised to make sure that they have plenty of room. Just how much room is plenty is not always easy to say. Baby chicks usually require twice as much room when they are a month old as they do when first hatched. For houses, from three and one-half to five square feet per hen is allowed when the scratching pen is inside, that is, when the house is expected to shelter the hens in bad weather, but two square feet per hen is sufficient when the house is used only for roosting. This is for Leghorns. Heavy hens require a little more room on the roosts. For yards it is not easy to say how much room a hen needs. Some poultrymen manage with very little yard space, and some allow a good deal. I think a pen 8x30 feet allows very comfortable space for a dozen hens, but many persons would put 20 in it. The acreage required for a given number of hens is largely a question of the skill of the man who takes care of them and the breed of the hens. I know a man who keeps 1500 White Leghorns on three and one-half acres, but only an expert could keep so many hens on so little ground. I should not care to keep more than 100 Orpingtons on an acre, but I like to have spare pens which can be planted to a soiling crop and so kept clean and sanitary. It is well to remember, in planning for fowls, that the more hens you try to keep on a given piece of ground, the harder it will be to keep it clean and the more danger will there be of sickness in the flock.

Failure to Keep Accounts

I mention this sin with great reluctance, for I am obliged to condemn myself. Nevertheless, I am sure that many failures come from this neglect. The side-liner, as well as the specialist, ought to know just what his feed is costing, and how much he is netting per hen. It is a difficult matter, this putting down every cent that comes in and every cent that goes out, but it ought to be done. Exactness in every detail of the day's work is not too high a mark to aim at and it is only when we have reduced our work to such a system as this that we can be sure that we are masters of it.

LARGE RABBIT EXHIBIT

The largest exhibit of rabbits ever held on the coast will be seen at the San Francisco Poultry Show, December 8 to 13. The entries will be heaviest in Flemish, German and Belgian Giants and New Zealands, besides a fine showing of English, Abyssinian and Peruvian cavies and English lops, French lops, Dutch, Himalayas, Silver Polish, Black and Tan, Angoras, Imperial Blues and Havanas. Many valuable prizes are to be given for the various varieties. L. Regner of San Mateo will pass on Flemish Giants and all others will be judged by Arthur Petty of Burlingame. In connection with this exhibit there will be a fine array of dresed carcasses. The best methods of killing and dressing rabbits for market purposes will be shown here. The entries close on November 25.—E. J. Talbot, secretary, Mutual Bank Building, San Francisco.

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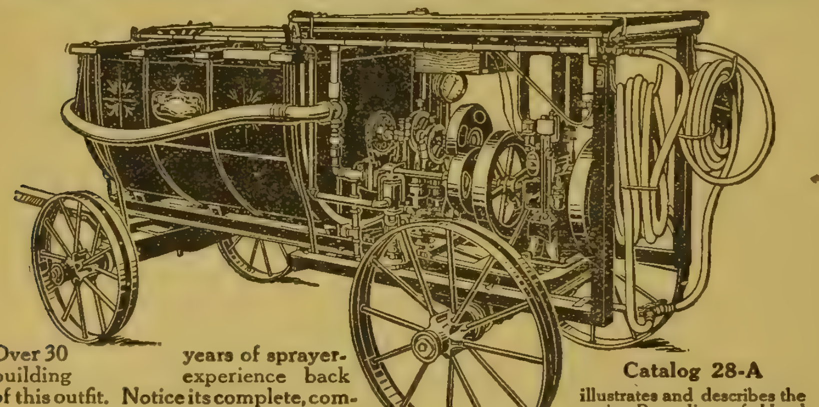

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FRUIT GROWERS' ASSOCIATION

(Continued from Page 491)

the same parent tree in the same year, a Chinese freak. I have tried to raise new varieties. They are almost always inferior. Two new varieties, the seed for which were taken from one tree, and in one year, produced two of the great commercial varieties in America today. This made possible the enormous peach planting that has taken place during the last quarter of a century. I happened to be in New York City in 1898 and there saw the first solid carload of peaches from Georgia. It set the commercial fruit world afire with possibilities. Some of us who were interested went down and looked over the field for good and new varieties. I came back and tried to settle. I never had money and I never tried to have. I talked about my plans to the produce men, the fruit men, the wholesale men, the retail men, about planting large orchards full of peaches. They all said that the trade just used a few California peaches, that they wouldn't eat peaches in July; that there was only one time when they wanted them and that was during the latter part of August and in September. They further said there was no market for peaches in June and July in any considerable quantity. But a few went ahead and began planting. Others planted farther up the coast, and still others planted, and from that has grown up a business which ships as much as 30,000, 40,000 or 50,000 carloads of peaches in a single year, sold in May, June and July. Fruit dealers, wholesalers and retailers will tell you now that the summer months are the best months.

After a good start of earlier planting in a small way in several states there began an extensive planting in the mountains of Maryland and West Virginia. They planted in the roughest land I have ever seen. Some of these mountain orchards of West Virginia were very steep and very high. They planted immense orchards and are now doing an enormous business. In Western New York and along the Lake Shore, from north of Rochester, Niagara Falls and east, there was hardly a commercial peach orchard 10 or 15 years ago, while now there are tens of thousands of acres, and the peach growing section is now extended way up into Michigan.

Get Rich Quick

But there have been too many non-horticulturists. Too many people have gone into the peach business in the East just like they went into the orange business here; people who were not horticulturists who were not lovers of fruit for its own sake. I will venture to say here that those who succeed in horticulture are those who love the trees and plants which they cultivate for their own sake, and for the beauty of the fruit produced. Many prefer to grow the finest of fruit, being satisfied if they realize only what it costs them to raise it, rather than to get rich on an inferior grade. Hundreds of people went into the peach business. Hundreds went into it for the sake of money making, just as though they would start a saloon for profit, but peaches looked better. Millions upon millions of peach orchards planted east of the Mississippi have been abandoned within the past 15 years. Cotton planters of Georgia, bankers, merchants, lawyers, even preachers, went into it, supposing that by owning some land and planting a few peach trees they could live happily ever afterward. At one time there was in Georgia something over 18,000,000 peach trees. Today there are less than 8,000,000, yet those 8,000,000 are producing more high-grade marketable peaches than did the 18,000,000.

Serious drawbacks to prosperity and success in fruit culture in the East and everywhere are brown rot and curculio. The brown rot was the one destructive force. It either injured the fruit very seriously in the orchards or spread in transit. It was not controllable until extensive experiments were carried on in Georgia and it was discovered that the fungus could be controlled by the use of the self-boiled lime-sulphur. This discovery resulted in putting a good many orchardists on their feet who were just on the point of going out of the business. In addition to controlling the rot the spray gave the fruit a tougher and more resistant skin, making a more beautiful fruit and a better shipping one.

Blessings of Adversity

These adversities are the blessings of the peach industry. They strengthen the character and develop the fight in the grower. If it were not for these serious obstacles every man with a little money and less experience would be growing peaches. The energetic man would have no advantage whatever over the slothful. The blessings of adversity were never so strongly apparent as they are today in horticulture.

* * *

Notes on convention matters are crowded out and will appear next week.

Cherry Trees

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For Sale—50,000 Sour Orange seed bed stock, fine quality, or will let to responsible party on percentage basis; also 2000 A1 late Valencias, two years old next spring, or might exchange for Washington navels. H. H. Eshelman, Soldiers' Home, Cal.

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For Sale—At Corning, 4,000 Mission Olive trees from three to seven feet in height. Cuttings selected from the best producing orchards at Corning. Trees mostly two years old in March. Address Midland Counties Land & Irrigation Co., First National Bank Bldg., San Francisco.

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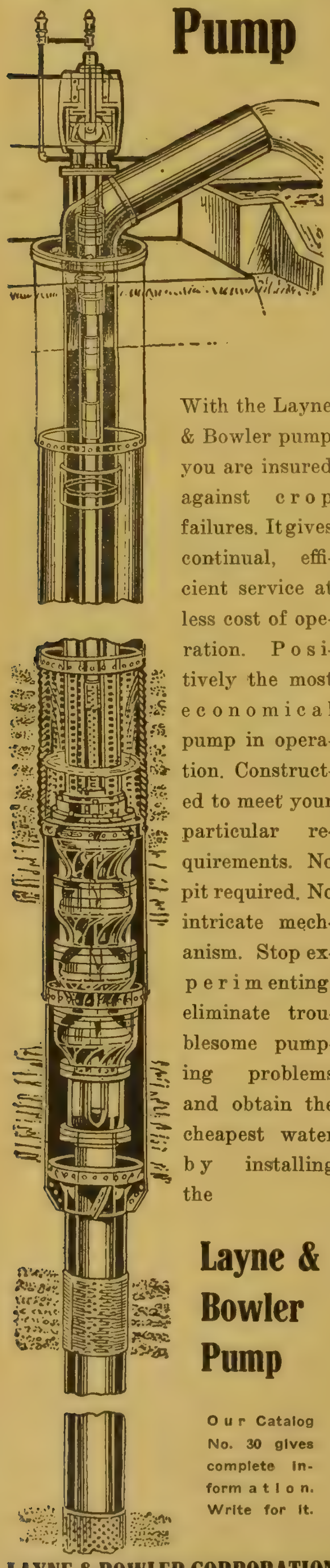

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Questions and Answers

THE EDITOR AND STAFF

Questions to be answered in this department should be received at this office one week before reply is expected. Write plainly on one side of the paper and sign full name and address. Unsigned communications receive no attention.

California-Florida Oranges

I am informed by a recent arrival from the east that California oranges do not find much favor in the eastern states, that the Florida oranges are so far superior in flavor, texture and juiciness. I would be interested to know whether the preference for the Florida fruit is universal in the eastern states or only among certain people or in certain localities where they have become accustomed to the Florida fruit. If it is a fact that the Florida orange is the most popular, is this due to faulty methods of curing or packing in California, and can these be remedied, or are climatic conditions here such that the fruit is inferior? The statement is also made that Florida grapefruit is far superior to the California variety.—Subscriber, Sespe.

Since the cotton centennial exposition held at New Orleans more than 25 years ago the California orange has stood chemical and other tests above any orange in the world. Tests made at that time showed the California navel orange to be richer in acids and far richer in sugar than any other. This is also proven to be true by market conditions in the east at the present moment. California Valencias are selling at practically double the price of the Florida early fruits, which are just beginning to come in. The matter of desirability of a fruit depends much upon taste. Where one wishes a sweetish juice without particular character, the Florida orange might appeal. But if a meaty, high flavored orange is desired, probably the California would be preferred. As to preference of the eastern trade, Californians can call attention to the fact that in the markets generally California oranges sell above those of any other section in the world. This is an indication that as a rule people prefer the richer fruit, containing a greater amount of sugar. With lemons the highest prices are practically always obtained for Californias. Of this fruit; however, Florida produces a very small amount. Compared with Mediterranean lemons Californias sell the higher. In grapefruit we must turn about and admit that Florida fruit commands the market, this for two reasons, first, the lack of bitterness and the large content of juice of the Florida fruit seems to please the taste of the average consumer. Personally, the writer prefers the tang of a good bitter grapefruit but recognizing the prevailing taste in this matter California growers are working toward producing a fruit which will have less of the bitter and meet more nearly the requirements of tre trade, and ultimately we believe we will accomplish this end. In the meantime, "Hats off to California grapefruit."

Curl Leaf of Lemon

What is the cause and remedy for curl leaf on lemon trees? Some of my best trees have become infected during the last two years, both bearing trees and nursery stock. Some of the fruit even shows a rough surface. I find no indication of scale or spider.—Subscriber, Los Angeles.

These leaves were submitted to Prof. H. S. Fawcett and he answers: "I have seen this curly leaf a good many times in different parts of the state, and I am inclined to think that there are two kinds. One kind is inherent in the bud and is one we would speak of as an 'off type' and often accompanies a rough, off type fruit. This could only be corrected by budding over the tree to a bud from a good normal tree. This condition of the leaf may sometimes be only temporary, due to some cause we do not understand, and the tree will later outgrow it. I would suggest that if the tree continues to show this condition under proper treatment, and the fruit is rough and of an off type, the tree be cut back and budded over.

Poisoning Rabbits

Is there any way of protecting beans from rabbits by placing out poison?—Subscriber, Merced.

The best protection against rabbits is rabbit-proof fence. It is very expensive, however, and at this season of the year when succulent feed, excepting in the neighborhood of alfalfa fields, is scarce, wisps of fresh alfalfa dipped in a strychnine solution is perhaps the best method of poisoning. A very small quantity of strychnine placed on watermelon rinds or similar succulent food is also excellent or, perhaps better, use lead arsenate, three pounds to 50 gallons of water.

Gophered Orange Trees

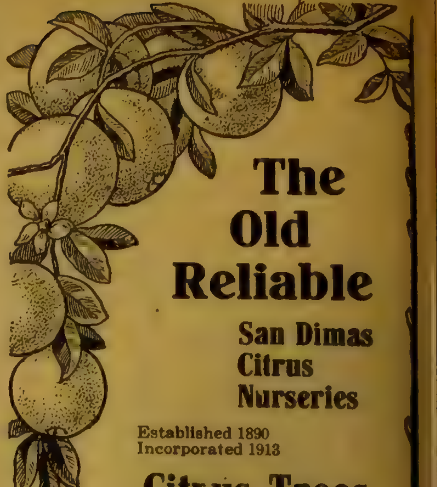
I find two bearing orange trees showing an unhealthy condition. Examination proves them to be undermined by gophers which come in from street ditch. I notice that the main root, small roots and bark and trunk are badly eaten off. Will such trees recover and how should they be treated?—Subscriber, Cucamonga.

If these trees are completely girdled, and so long ago that they are now showing indications of suffering by the appearance of the leaves, it is too late to make application of grafting wax or anything which will preserve the inner bark and permit it to grow over. That is, we suppose the wood has dried over and there is no possibility of forming the new bark. In such cases, if completely girdled, the only salvation for the tree is the bridge graft which is described in the issue of July 23, 1914. Do this at once. Pool the trees to run out gophers if any remain, putting water good and deep so as to thoroughly saturate all the ground, remove perhaps one-half of the top or at least reduce it. An application of stable manure will also aid in preserving the moisture in the soil and keeping it in good condition. Then go after the gophers, and for them the only preventive is eternal vigilance.

Morning Glory

I am planning to set out a walnut orchard in a field that is more or less infested with morning glory. I understand the only effective way of killing out this pest is by thorough weed-cutting during the entire growing season, but of course that is hardly practicable in a young orchard. Do you think the morning glory would be sufficiently detrimental to walnut trees to justify losing a year and the use of the land for the sake of fighting it, not to mention the labor and the expense?—Subscriber, Santa Barbara County.

We would plant the walnut trees



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this season and proceed to kill out the morning glory. The only practicable way to do this is perhaps by continuous weed-cutting, though we would call attention to the experience of a contributor to the Cultivator who found it possible to eradicate his pest by sowing the ground very thickly to rye. If the weed cutting plan is followed, then use care that no roots are dragged from infested spots to clean spots in the same field. However, from the inquiry it appears that the field is entirely infested.

Planting Daffodils and Gladiolus

When is the proper time to plant daffodils and gladiolus bulbs? In what kind of soil will they grow best? Can such bulbs be planted to best advantage in exposed or shaded places?—Subscriber, Hanford.

Daffodils should be planted at once —or a month sooner; gladiolus, any time after the first of January. With the gladiolus plant four or five inches deep, daffodils five to six inches, in good rich sandy loam. Cover with a mulch or rich stable manure and watch for a glory of blooms from the daffodils late in February or early in March. By planting gladiolus from the first of January to the first of June bloom may be had until September. Both of these bulbs will stand for a little shade. Perhaps in your section the gladiolus which are expected to bloom in the summer would do better in the shade. In either case the bulbs should be planted in ground from which the water may be withheld when they are done blooming.

Small Olives

What is the cause of my pickling olives being so small, and is there a treatment that will make them grow to larger size? We have irrigated and fertilized liberally, and the soil has been well cultivated about the trees, but this year the fruit is very small.—Subscriber, Sacramento.

From the statement that the fruit is small this year we assume it has been large on the same trees in preceding years. If such is the case it is a very hard question to answer in the face of the amount of fertilizer, irrigation and thorough cultivation given. Of course there are olive trees which never bear large fruits, and it is barely possible these trees have such an immense crop that they cannot bring all up to pickling size. In the short time remaining before harvesting it would be impossible to bring them up by any treatment we could suggest. We will ask olive growers who have had experience along this line to give us suggestions.

Breeds of Rabbits

Are Rufus Red and New Zealand Red rabbits one and the same breed or are they different breeds of rabmits? Also what is the color of the Flemish Giant?—Subscriber, Exeter.

Rufus Red is always applied to Belgian hares in speaking of their color. It is applied to those which approach standard requirements in color. The animals known as New Zealand hares are often called New Zealand Reds, owing to their color being red or a rich golden tan, but the former is the correct and more appropriate name for this variety, which is a different breed from the Belgian hare. Flemish Giant rabbits come black, steel, light greys and black coated over fur with white hairs here and there, called Silver Tips. A local state organization is trying to get whites recognized, but these are not genuine Flemish, but ordinary large white mongrel rabbits. The steel greys are the most valuable and sought after followed by the blacks. —R. V. M.

Slobbers

In recent Cultivator we noticed an inquiry regarding slobbers, the reply stating that there was no cure. If taken in the first stages of the disease we have cured several rabbits by the addition to the drinking water of one teaspoon of powdered alum to one quart of water. Continue this for two or three days.—Mrs. Jas. R. Beck, El Monte.

In addition to the above we may quote as follows from the Belgian Hare Guide: "Put a small pinch of salt in the mouth and rub it in the wet fur about the mouth. This has been found a sure cure, if in addition all food is removed from the rabbit for 12 hours. Mr. Wilkins recommends this treatment: Give twice daily a teaspoon of milk or water, into which put five to ten drops (according to the age of the rabbit and the severity of the attack) of a mixture of equal parts of oil of juniper and sweet spirits of nitre. As this sometimes fails cholerine is also recommended as a help to restore the digestive agents to their proper condition and act as a tonic in building up the strength of the animal. In addition to the treatment given above, remove the sick animals to another hutch and keep all food away from them for 12 hours; after that give them an entire change of diet."

Alfalfa in New Mexico

Would like some general information regarding alfalfa and pumping plants. What size of engine and what capacity of pump is required to irrigate 10 acres of alfalfa? The lift of water is some 60 feet. How many gallons per hour will one-quarter head, or 25 inches, running under a three-inch pressure in ditch make? In putting in alfalfa how is the land laid off, the seed sown and covered, and what time of year is best to start it? For locality I am thinking of the east central part of New Mexico.—Subscriber, Santa Ana.

The climate of New Mexico being very dry will necessitate the frequent application of water to secure good results from alfalfa and provision must be made to irrigate at least once in 20 days during the summer months, and possibly oftener on very porous land. About six inches in depth of water will be required at each irrigation, and in order to be sure of this amount pumping machinery should be installed which will pump the necessary water in 15 days, if a reservoir is used, and in a shorter time if ditches or pipes are used direct from pump.

Any good centrifugal pump with a capacity of 17 miners inches will pump enough in 15 days of 12 hours each to cover ten acres six inches deep. A six-horse power engine will be sufficient to lift this water 60 feet, but if there is a probability of the water level being lowered it will be better to put in larger power. It will not be economical to put in power and pump large enough to irrigate alfalfa without using a reservoir if only 10 acres of land is to be irrigated.

In common usage in California a continuous flow of nine gallons of water per minute is called a miners inch, but the statute miners inch is a flow of eleven and one-fifth gallons per minute, whether the head above the opening is greater or less. The common measurement of a miners inch is a one inch square opening under a four-inch pressure, but there are so many conditions to be considered that the measure is seldom correct. Twenty-five inches of water under common usage will be 13,500 gallons per hour and according to statute will be 16,875 gallons.—J. B. M.

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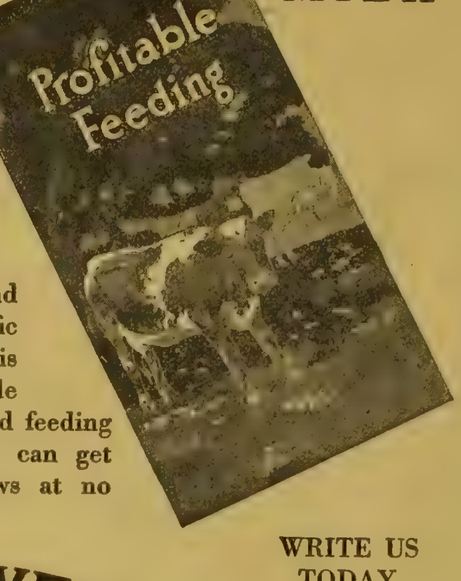

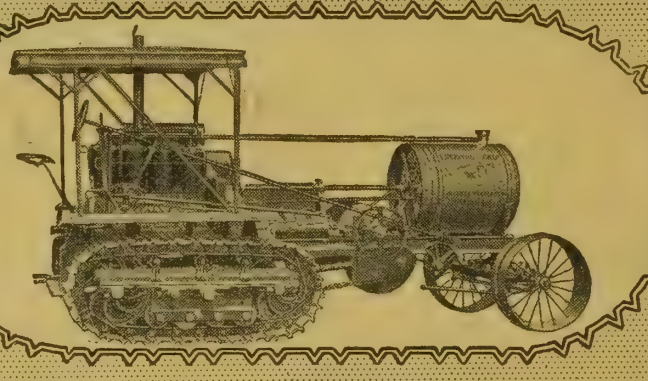

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The usual practice with land for alfalfa is to lay it off in lands of 20 to 50 feet in width with borders between to hold the water. The land should be brought to an even grade in the direction the water will run and level across the small lands, so there will be no high places which will not receive enough water nor low places which will waste water by having it deeper than is required. The width and length of the small lands should be regulated by the supply of water to be used as they should not be larger than can be covered in 30 to 40 minutes.

The seed bed should be well pulverized and the seed covered not deeper than one-half inch in medium heavy ground. About 20 pounds of seed is usually sown on an acre, but a large amount of this is lost as some will get so deep that it cannot come up and some will be so close to the surface that it dries out before the root can reach permanent moisture. The best success will be had by sowing in the cooler part of the year and at the time when there is the least danger of frost as the young plants are coming through the ground. If the weather should be very dry it will pay well to run a roller over the ground as soon as the seed is sown as this brings the moisture to the surface and secures a better germination and a better stand of alfalfa.—J. B. N.

Lice

What would cause half grown and grown chickens to hold their wings away from their bodies? In other words their wings hang as if they were unable to hold them up. These chickens are on green range and are fat. One hen got well. I am feeding Egyptian corn in the head with a mash.—Subscriber, Bakersfield.

I think your young chickens have a bad case of lice. Dust them thoroughly with a good louse powder. The Lowry powder is made as follows: Take three parts gasoline and one part crude carbolic acid, mix together and add enough plaster of paris to take up all the moisture. Add only a little at a time and keep stirring so that the liquid is evenly distributed. When you have finished it should be a dry pinkish-brown powder. Dust this thoroughly into the fluff and under the wings and repeat in a week to kill the nits that were left after the first dusting.—J. A. K.

Plowing under Vines

Is it wise to plow under tomato vines where the ground is to be used the following year for the same purpose?—Subscriber, Mountain View.

It would not be wise, for any bacterial or fungous diseases of these vines might be retained in the soil and prove injurious to the next crop. The vines could be raked off and distributed on orchard land or on land where a similar crop was not contemplated the following year and perhaps prove valuable as a humus former, but if no such place was open for disposal would advise burning rather than plowing under. Because of possible continuance of disease it is better to rotate, planting some other crop and transferring tomatoes to new land.

Egg Trouble

What is the cause of hens loosing their eyesight by the eyelids closing? —Subscriber, Bakersfield.

Are there no other symptoms, a discharge from the eye, perhaps, or inflammation of the eyeballs? Have you looked to see if there is anything in the eye? Sometimes hens running at large get "stickers" in the eyes, and these if allowed to remain cause an irritation which is sufficient to destroy the sight. Sometimes these cases come from roup. If there is any discharge I should treat them for roup. If there is none I should see if I could find any foreign substance in the eye. In either case bathe the eye twice a day with a boric solution (half a teaspoon of boric acid dissolved in a teacup of warm water). This is the best remedy for any inflammation of the eyes.—Subscriber, Bakersfield.

Planting Peaches and Prunes

Would it be advisable to plant peaches in this portion of Los Angeles County? Would they or would prunes do as well as in the Santa Clara Valley? Would the Satsuma plum be profitable? We have occasional fogs. Is the Hale peach good for this section?—Subscriber, Puente.

French prunes do better in the San Gabriel and Puente Valleys than peaches. The Satsuma plum is a good bearer in that district but the market is very limited.—J. W. Mills.

We think the Hale peach is an excellent peach and doubt not it will adapt itself to California conditions.

Chick Peas

I am sending a bean or pea which grew this year. What is its name and what is its worth?—Subscriber, Ventura.

Dr. Davidson answers that this is Cicer arietinum L., or chick pea. He is uncertain whether it is the one usually cultivated and sold to the trade or not.

Rice Culture

We have had several requests for information as to rice culture and will give such an article in this issue of the Cultivator from one who has observed it from all standpoints.

VETERINARY

(Continued from Page 498)

rectum or it may be due to something wrong with one of the ovaries. In the latter case it would be necessary for a veterinarian to operate and remove the ovary. If it is due to pin worms they can be gotten rid of by boiling two five-cent papers of scrap tobacco in three gallons of water for 20 minutes. Strain, cool to animal heat, and inject the whole of it into the rectum and make the horse retain it as long as you can by holding the tail down. This should be repeated in about a week.

Wire in Feed

Had some short pieces of wire two to four inches long which got upset in the manger where a young colt is fed. Am afraid the colt may have eaten some of the pieces of wire, although he seems well at present. What is best to do if he gets sick or would it be best to give something now?—Subscriber, Bachelor.

Probably the colt did not eat any of the wire. Horses very seldom swallow any hard substance with their feed. If by mistake they get a wire, nail or piece of rock in the mouth they will push it out with their tongue. Cattle are not so particular but frequently swallow pieces of wire, nails etc., with the feed, and when slaughtered for beef somtimes a handful of indigestible articles are found in the stomach.

Boils

Over a year ago a large swelling appeared on the body of my mare just back of the front legs. Two ulcers formed and discharged pus. Later ulcers formed on the breast muscles and after that others developed on the thighs, both inside and out, and on the neck near the ear. All were large and discharged a large amount of pus. The mare was turned out all last winter and fed grain. During the whole of the trouble she was very emaciated but later improved some. Now another large ulcer has developed on the hind leg between the ankle and hock. What is it and what can be done for it?—Subscriber, Lordsburg.

This is one form of blood poison and so far the mare has been able to resist the attacks of the germs. To rid the system of the poison the mare must be given tonics and fed liberally. For a tonic get powdered gentian six ounces, powdered nux vomica three ounces, bicarbonate of soda three ounces, sulphate of iron four ounces and ground fenugreek enough to make two pounds. Mix and give a tablespoon in the feed morning and evening. Also once a day put a handful of ground flax seed in the feed.

The Household Department

WHERE DO YOU LIVE?

I knew a man, his name was Horner,
Who used to live on Grumble Corner;
Grumble Corner in Cross-Patch Town,
And he never was seen without a frown.
He grumbled at this, he grumbled at that,
He growled at the dog, he growled at the cat,
He grumbled at morning, he grumbled at night,
And to grumble and growl was his chief delight.

He grumbled so much at his wife that she
Began to grumble as well as he;
And all the children, wherever they went,
Reflected their parents' discontent.
If the sky was dark and betokened rain,
Then Mr. Horner was sure to complain;
And if there was not a cloud about,
He'd grumble because of a threatened drought.

His meals were never to suit his taste;
He grumbled at having to eat in haste;
The bread was poor or the meat was tough,
Or else he hadn't had half enough.
No matter how hard his wife might try
To please her husband, with scornful eye
He'd look around, and then, with a scowl
At something or other begin to growl.

One day, as I loitered along the street,
My old acquaintance I chanced to meet,
But his face was without the look of care
And the ugly frown that he used to wear.
"I may be mistaken, perhaps," I said,
As, after saluting, I turned my head,
"But it is, and it isn't, Mr. Horner,
Who lived so long on Grumble Corner."

I met him next day, and I met him again;
In melting weather, in pouring rain,
When stocks were up and when stocks were down,
But a smile somehow had replaced the frown.
It puzzled me much; and so, one day,
I seized his hand in a friendly way,
And said: "Mr. Horner, I'd like to know
What can have happened to change you so?"

He laughed a laugh that was good to hear,
For it told of a conscience calm and clear,
And he said, with none of the old-time drawl:
"Why, I changed my residence, that is all."
"Changed your residence?" "Yes," said Horner,
"It wasn't healthy on Grumble Corner,
And so I moved: 'twas a change complete;
And you'll find me now on Thanksgiving Street."—Selected.

ONE THANKSGIVING

Thanksgiving was coming. Every day brought nearer the jolliest of days, but alas! for Benny there would be no Thanksgiving. He had nothing to be thankful for.

Benny was a city waif. His hair was yellow, his eyes blue, but in looking at him one saw mostly freckles. His clothes hung in rags about the thin little figure and his hands were ever in his pockets. One cold November day as he was sitting by a coal fire in a railroad station he noticed the following advertisement in a newspaper:

"Girl Wanted—Ten or twelve years. Apply Henry Flagg on Wellston Pike."

Benny wondered if a boy wouldn't do as well. Boys were lots better than girls and lots stronger. Just then an old and kind-faced clerk happened near and Benny said timidly:

"Say, can yer tell me where Wellston is?"

The clerk looked surprised, but answered:

"We-el I'm not sure but I think this road goes through the town. It's about 12 miles west."

With sinking heart he heard the "12 miles," but immediately he braced up. Was he not strong, and a boy? So he started sturdily down the track.

Benny reached Wellston about four o'clock in the evening. His shoes were almost off his feet, his toes were stiff and blue, his fingers numb with cold, and he was very hungry. He timidly asked where Henry Flagg lived and received the direction that it was two miles south. So he trudged wearily onward.

Benny had gone half a mile when the sound of horses' hoofs came to his ears. Looking around, he saw that it was an old white horse, hitched to a sleigh in which sat an old man, white bearded and with a kindly face.

"Well, son," the farmer called as he stopped, "you look well nigh froze. Come, jump in. I reckon you won't object to a lift."

So Benny was soon tucked in the fur robes with only the tip of his nose sticking out. He felt very cozy and warm.

"Well, and where do you happen to be going," the old man asked in a jovial tone.

"I'm a goin' to Henry Flagg's," Benny replied, "I saw in the paper where they wanted a girl. I can do lots of things and I'm twelve."

"Ye don't say," was the ejaculation. "Well, I happen to be the same Henry Flagg. First I knowed any one was expected."

Then Benny told all and just as he finished they drove up to a big comfortable-looking white house, out of whose chimneys the smoke poured in a delightful warm-looking way.

Mr. Flagg drew up with a loud, "Whoa, Nell." Then he just gathered Benny up in arms, robes and all, and started off with him.

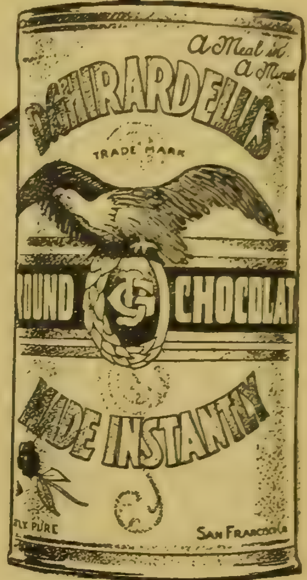
"Now," he said as he walked along, "you just call me Uncle Hank, then I think we'll get along better."

"All right," was the muffled answer. "My name's Benny."

Uncle Hank noisily entered the kitchen where a stout, rosy-cheeked, white-haired woman was stirring something that smelled delicious. She dropped her spoon as Uncle Hank set Benny down in a big chair and commenced taking off his shoes and stockings.

"Sary," he said, "I reckon you better hunt up a pair of my wool socks for this boy, cause his feet's cold. I'll run out and unhitch Nell."

With the exclamation, "land sakes," she hurried off, but soon returned with a pair of big blue, warm-looking stockings that she slipped on Benny's feet. Then she picked up the spoon and commenced stirring again. "And



Bring up a Girl—

Along lines that will develop her into a robust woman. Give her Ghirardelli's Ground Chocolate. No fear of harmful after effects. It combines all the elements which growing girls require, and it has a taste that every child likes. Every mother should serve it because of its purity, its wholesomeness and the ease with which it may be prepared. Costs less than a cent a cup.

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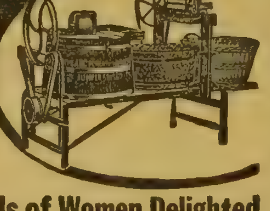

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now," she said as she stirred, "how in this world did you happen to come?"

Benny began at the beginning and told it all over again, while Sary was so interested that she forgot to stir the mince meat.

"Watch out there, that'll burn," he cried, as he caught the spoon from her and began stirring briskly. "Now Aunt Sary, don't you think you better get the pies ready?"

Aunt Sary did think so and so she bustled about, with Benny helping, until it was time to get supper. Then he peeled the potatoes, carried in the wood and kindling and set the table. After the supper was over he helped her do the dishes. Then Benny, Uncle Hank and Aunt Sary sat around the fire while they debated whether Benny should stay or not, At last is was decided that he should stay.

"I declare," exclaimed Aunt Sary, as she tucked him in, "I'm most glad you come."

"I know I am," said Benny as he snuggled down between the covers and grinned to himself in the darkness.—Ex.

Thank God every morning when you get up that you have something to do that day which must be done, whether you like it or not. Being forced to work, and forced to do your best, will breed in you temperance and self-control, diligence and strength of will, cheerfulness and content, and a hundred virtues which the idle will never know.—Charles Kingsley.

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A DON'T WORRY CHRISTMAS

First Prize Article

Written for California Cultivator
By Lily Inglehart, Bellflower

The hard times, which visited many homes last winter, brought many a lesson for which the writer has since been grateful. Especially was this so in regard to Christmas giving. When it was first found that there would be practically no money for gifts, there was a feeling of despair. My Christmas list was long and although the gifts were always inexpensive, it had required a neat sum to fill the list. What would I do? One could not accept gifts, even from life-long friends and dear ones, without giving in return. At least this was my thought. I finally decided to write to each one, telling them the circumstances and suggesting that we exchange Christmas greetings without gifts. Imagine my surprise to find they were all pleased with the idea, as many were in like circumstances. One sister wrote back "Don't worry. We are going to have the most sensible Christmas ever and the most fun." And so it proved. The time usually spent in buying or making elaborate gifts was spent in more wholesome ways.

Sister planned an excursion into the hills for berries and greens to brighten the house. Formerly we had been too busy for anything of this kind, and how we did enjoy it! We also found we had plenty of time to write long, newsy letters to those at a distance into which we tucked either a Christmas card, a snap-shot photo, or a tiny sachet, or perhaps some pressed California flowers, gathered while on our vacation. Gifts were not entirely dispensed with, and we vied with each other, as to who could make the most out of almost nothing. Those who had a little money to spend wisely spent most of it for toys for the kiddies.

Simplifying the Christmas bill of fare is not so difficult. As far as possible choose dishes which may be prepared in advance. No one should be a slave to the cook stove on Christmas Day. Back numbers of the Rural Californian and Cultivator will furnish menus for both rich and poor, and with all the milkless and eggless, and butterless recipes recently seen no one need be accused of extravagance.

Your Christmas pudding will taste all the sweeter if some homeless person is invited to share it. You need not look outside your own circle of friends to find such. Girls who live in rooms and boarding houses, young men who either depend on the restaurant or "bach." These and many others will welcome a day spent in a real home.

In my father's home, the family Christmas tree is always grown in the back yard, by allowing one tree of the hedge to send out a beautiful top. This is decorated Christmas Eve and the children are allowed to see it Christmas morning. But the distribution of gifts does not take place till Christmas night, as some members of the family work late, and this gives them an opportunity to add to the pile of gifts under the tree during the day. The little folks, of course, get most of their toys in the morning, but there is always at least one mystery package on the tree for everyone, and there is always much fun and guessing over the packages during the day. One does not get much more than a peep at the gifts when they are distributed and the anticipation of a closer examination the next day does away with any "flat feeling."

Guests for the evening usually arrive during the afternoon, which is usually spent in playing games. Supper, consisting of chocolate, sandwiches, cake, fruit, etc., is served in the living-room, while all are seated round the Christmas tree. This saves lots of work and is quite enough after a good dinner at noon. Old Santa usually arrives in time to distribute the gifts and is received with a roar of laughter and fun. And while speaking of this jolly old saint, I would like to ask, "Does anyone think Christmas can be perfectly safe and sane as long as we deceive the children in regard to Santa Claus?" Several have recently said to me, "Yes you are right, but it does seem a pity to deprive the little folks of so much fun. My own experience has been that children lose nothing and gain much by knowing the truth. All children love "make-believe" games, and they can early be taught that old Santa is merely a personification of the real spirit of Christmas. The spirit of love, good-will and generosity which is abroad at Christmastide is responsible for the well-filled stockings and shining trees and is the real Santa Claus. But when the jolly old man appears in all his glorious make-up, the children enter into the fun just as much as in their make-belive games and for the time being they forget that he is merely playing a part.

The writer feels that no Christmas celebration is quite complete without the reading or telling of the Christmas story. Why all this joy and gladness? The children should have the thought of "Peace on earth, good will to men" so impressed upon their consciousness that they will always associate it with the Christmas season, and as a consequence their whole lives may be enriched with a love and consideration for others, even as was the life of the Babe of Bethlehem.

CHRISTMAS PLANS

Second Prize Article

Written for California Cultivator
By Mrs. Floy Crosby Smith, Fairoaks

As the problem of a "Safe and Sane" Christmas will soon confront us again, I will suggest some of the things that have robbed that season of it terrors, for me.

I write from the standpoint of a farmer's wife of limited means and still more limited time. No doubt there are many others in the same class.

I find that my intimate friends feel that it is wrong to lavish upon Christmas gifts the time and money that is really needed in the home, so our gifts to each other are simple and inexpensive.

A few of my friends limit their Christmas giving to cards with cheery greetings—and I cannot discover that any of us value their friendship any the less, and we should miss their tokens of good will as much as the more substantial gifts.

It is a great help, too, to keep Christmas in mind all the year round, for so many times when in town we see articles on special sale, and the thought comes, "That is just what Cousin May was wishing for," or "That picture or bit of fancy work is just the kind that my old friend likes best."

If the purchase is made at once the cost is not very noticeable, and the article can be wrapped at once and laid away, and one gift is off your mind.

In spite of all that has been said about prosaic gifts, I still believe in giving things that the recipient can actually use.

Did you ever know a city housekeeper who would not really appreciate some fresh reminder from the country, a roll of butter, a few eggs, or a jar of honey or peach preserves? And since Uncle Sam will carry by parcel post anything from a pumpkin to a box of holly and mistletoe, the actual cost of such gifts is small.

Perhaps your problem, like mine, is the ever present small boy. But boys of all sizes have always shown a fondness for eating. Is there not in your back yard a fig, almond or English walnut tree which yields more than you can use? What would please the youngster more than a pretty box filled with salted almonds or dried and pressed figs, or even shelled popcorn? You may be sure that the gift may be repeated for years without becoming monotonous to him.

If you have the time and ability, and prefer to make your gifts, it costs no more to make something useful, and though she may be too polite to tell you so, the busy housekeeper prefers it to some bit of flimsy finery for which she has no possible use.

The hardworking farmer's wife, with a family of little children, may admire the beauty of the gifts that reach her at Christmas time; a half-dozen boudoir caps, doilies and cushion covers which would never survive laundering, but they are soon relegated to some out-of-the-way place and forgotten. If her friends had expended the same amount of time and work upon embroidered pillow slips, towels, aprons, or even a garment or two for the baby, she would not only have admired them just as much but would have been reminded continually of the giver, by seeing them in use.

Often some member of the family is wishing for something which he can scarcely afford to buy. Why not, at Christmas time, instead of showering him with a number of small gifts, combine and purchase the easy chair or set of books he so much desires?

If you do not know of anything your friend wishes, try sending a dollar's worth of postage stamps and a humorous note. I'll venture he uses the first stamp to send a note of thanks, and he will mean every word he writes.

Whether your gift be great or small do not neglect to send with it a note or post card with a few friendly words, for "The gift without the giver is bare," and the little personal touch greatly enhances the value of your gift.

THE PRIZE CONTESTS

The first prize for article on the "Safe and Sane Christmas' goes to Mrs. Lly Inglehart of Bellflower. Her "Don't Worry Christmas" will be an inspiration and help to many of us.

The second prize is won by Mrs. Floy Crosby Smith of Fair Oaks for "Christmas Plans,' in which she gives many practical hints to the country home-maker on making Christmas a happy time.

Other excellent articles have been received and some will appear later in these columns. We certainly have some delightful and thoughtful writers among our household readers.

The Next Contest

This month we had no recipes and we know that all have missed them, so for the December contest we will come back again to good things to eat.

$.200 Cash

will be given for best menu for Christmas dinner, recipe for one dish and your plan for preparing the dinner so that as little work as possible is left for Christmas day itself.

$1.00 Cash

For second best.

Cultivator for Six Months

To all whose menus are published. When you send in your menu, send also name of one of your family who is now receiving the paper so his or her subscription may be extended rather than having a second copy go to your address for the six months.

Write Early

Address all letters to California Cultivator, Los Angeles, and mail them so they will reach this office by the morning of Thursday, December 10. The articles will appear in the issue of December 17 in time to give everybody opportunity to profit by the Christmas dinner suggestions.

Photo Contest

The next photo contest closes Tuesday morning, November 24, and prize winners will appear in the issue of December 1.

As before, $2.00 will be given for best and $1.00 for second best photo of country life on the Pacific coast and for all retained for future engraving, six months' subscription to the Cultivator.

THANKSGIVING DAY MENU

Written for the California Cultivator

By Isabel Cottle

Breakfast

Baked Apples Thick Cream
Corn Oysters
Grilled Club House Sausage
Oatmeal Wafers Coffee

Lunch or Supper

Scalloped Oysters Hot Biscuits
Baked Oranges
Little Pumpkin Pies
Citron Pound Cake Tea
Nuts Raisins

Dinner

Fruit Cup, Southern
Clear Soup Bread Sticks
Roast Turkey, Oyster Stuffing
Giblet Gravy
Peas in Potato Cases
Endive Salad, French Dresing,
Chiffonade
Celery Ripe Olives
Cranberry Frappe
Suet Pudding Black Coffee
Fruit

Fruit Cup, Southern

Make a good lemonade, not too sweet, add fruit juice in season, as strawberry, grape or raspberry. Chill, pour into high narrow tumblers, place a slice of pineapple on top, add a sprig of mint and a cherry. Serve with straws.

Suet Pudding

One cup chopped suet, one cup molasses, one cup raisins, one cup currants, three cups flour, one cup dry bread crumbs, two cups sour milk, one teaspoon soda, level teaspoon salt, one-half teaspoon each cloves and cinnamon. Steam two hours.

Sauce

To one cup sugar add one-half cup butter, one egg slightly beaten, three tablespoons hot water. Cook until slightly thickened. Flavor as desired.

Cranberry Frappe

Boil one quart of cranberries and two cups of water five minutes. Strain through cheesecloth; add two cups sugar and the juice of one lemon. Cool and freeze to a mush.

Peas in Potato Cases

Prepare three cups mashed potatoes, well seasoned and mixed with soft butter and a little cream or milk. Shape into little cases or nests and brush lightly with the yolk of an egg mixed with two tablespoons of cream. Brown in a moderate oven and fill centers with peas, which have been cooked, drained and seasoned.

French Dressing, Chiffonade

One-half teaspoon each of salt and paprika, a grating of onion pulp, six tablespoons of oil and three of vinegar. Beat thoroughly and add one hard boiled egg, one teaspoon of chives and one tablespoon each of red and green pepper and cooked beets, all chopped very fine.

Oyster Stuffing

Three cups of stale bread crumbs, one-half cup of melted butter, salt and pepper, few drops of onion juice, one pint of oysters. Mix the ingredients in the order given, add the oysters, cleaned and drained from their liquor.

THE WOMAN'S DEPARTMENT OF THE STATE FRUIT GROWERS' CONVENTION

The woman's department of the state fruit growers' convention held some intensely interesting sessions on Wednesday, Thursday and Friday afternoons of last week in the parlors of the Hotel Clark at Los Angeles. We regret that lack of space in this special contest issue forbids giving some account of the sessions. This will appear next week. However, the women will be as much interested as the men in the report of the main convention in leader and following pages in this issue, as was well shown by the large number of women who attended all sessions of the convention.

To have bread excite thankfulness and a drink of water send the heart to God is better than a sigh for the unattainable. To plow a straight furrow on Monday or dust a room well on Tuesday or kiss a bumped forehead on Wednesday is worth more than the most ecstatic thrill under Sunday eloquence. Spirituality is seeing God in common things and showing God in common tasks.—Maltbie D. Babcock.

"'Tis the songs ye sing
And the smiles ye wear,
That's a makin' the sun
Shine everywhere."

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The National Stockman & Farmer Pittsburgh, Pa. Established 1877.	125,000 Weekly
The Farmers' Review Chicago, Ill. Established 1877	100,000 Weekly
The Farmer's Guide Huntington, Ind. Established 1889.	80,000 Weekly
The Nebraska Farmer Lincoln, Neb. Established 1859.	50,000 Weekly
Farm and Ranch Dallas, Tex. Established 1882.	90,000 Weekly
Field and Farm Denver, Colo. Established 1872.	30,000 Weekly
California Cultivator Los Angeles, Cal. (Rural California merged July 1, '14) Established 1877.	21,000 Weekly
The Washington Farmer (Formerly The Ranch) Seattle, Wash. Established 1881.	20,000 Semi-Mo.
The Oregon Farmer (Formerly Oregon Agriculturist) Portland, Oregon. Established 1891.	15,000 Semi-Mo.
The Idaho Farmer Boise, Idaho.	10,000 Monthly
Farm Engineering Springfield, Ohio. Established 1913.	75,000 Monthly

For advertising rates or any other imformation about any or all of these papers address nearest office.

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Candled	.52
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Prime Steers	7¼@7½
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ONIONS

Wholesale selling price:

Australian Brown, cwt	.90@95
Silverskins, cwt	1.85@2.00
White Globe	2.00@2.15
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Garlic	.16@17

VEGETABLES

Wholesale selling price:

Artichokes, Northern, doz	.50@90
Beets, doz.	.30@35
Beans, String	.6@8
Lima	.5@6
Cabbage	.65@75
Carrots, doz.	.30@35
Cauliflower, doz.	.40@45
Celery, crate	1.75@2.35
Corn, Sugar, box	.60@65
Cucumbers, lug	.50@60
Egg Plant	.3@4
Escarole, doz.	.40
Horseradish, lb.	.15@16
Leeks, doz.	.35@40
Lettuce, crate	.85@1.00
Mint, doz.	.35@40
Parsnips, doz.	.25@30
Okra, lb.	.6@7
Onions, Green, doz. bunches	.15@20
Oyster Plant	.30@35
Parsnips, doz.	.25@30
Peas, lb.	.4@5
Peppers—	
Bell, lb.	.4@5
Chili, lb.	.3@4
Pumpkins, lb.	.1½@2
Radish, doz.	.20@30
Rhubarb, box	.80@85
Rhubarb, box	.80@85
Spinach, doz.	.20
Squash—	
Summer, lug	.35@50
Crookneck	.30@40
Hubbard, lb.	1½@2
Turnips	.30@35
Tomatoes, lug	.50@60

FRESH FRUIT

Wholesale selling price:

Apples—	
Bellflowers	.70@90
Jonathans	1.25@1.35
Spitzenbergs	1.25@1.35
Rome Beauty	1.35@1.50
Pearmains	.75@90
Spitzenbergs	1.20@1.35
Bananas	.3½@4
Berries—	
Strawberries, basket	.6@8
Blackberries, basket	.5@6
Casabas, doz.	1.35@1.50
Cranberries, bbl.	7.75@9.00
Figs, box	1.75@2.00
Grapes—	
Black Moroccos	1.10@1.25
Cornichon	1.10@1.25
Malagas, crate	1.00@1.20
Muscatels, lug	1.10@1.25
Tokays, lug	1.35@1.50
Red Emperors	1.35
Guavas, basket	.3@4
Pears, Barlett, lb.	.7@8
Seckel, lug	1.30
Winter Nelis, packed	2.25
Flemish Beauty	1.85
Persimmons, lb.	.3@7
Pineapples, lb.	.6@6¼
Pomegranates, box	1.50
Watermelons, lb.	.1½@2

CITRUS FRUIT

Wholesale selling price:

Lemons	2.50@3.50
Grapefruit, Seedless	2.25@2.50
Navels	2.75@3.00
Valencias	2.00@3.00
Limes, basket	.75@1.00

DRIED FRUITS

Wholesale prices to retailers are:

Evaporated Apples, Fancy., lb. boxes	.6¼@7½
Apricots	.8½@10
Nectarines	.12¼
Peaches	.5½@6
Pears	.8@12
Prunes	.5¾@17
Plums	.10

NUTS

Prices named by California Walnut Growers' Association are:

No. 1	.16½
Budded Walnuts	.20
Jumbos	.19
No. 2	.12
Culls	.9

Prices fixed by California Almond Growers' Exchange, f. o. b. California.

Almonds—	
Nonpareil	.21
I X L	.20
N P U	.19
Drake's Thinshell	.15
Pecans	.17
Peanuts—	
California, Raw	.6
Japan	.7½
Eastern	.7½
Rice Corn	5.00@5.25

HONEY

Wholesale selling price:

Comb, Fancy, Water White	.14
White	.12
Light Amber	.11
Extr. Water White	.7
White	.6
Light Amber	.5½
Beeswax	.32

RICE

Wholesale selling price:

California	5.00
Broken	3.50@3.75

BEANS

Wholesale selling price

Producer's price not far from one dollar under these quotations:

Limas	5.60@5.75
Lady Washington	4.50@4.75
Black Eyes	4.90@5.25
Pinks	4.00@4.10
Lentils	8.00@9.00
Navy	5.25@5.35
Small White	4.90@5.00
Garbanzos	6.00@7.50

HAY

Buying prices f. o. b. cars Los Angeles:

Barley	10.00@11.00
Wheat Hay	10.00@11.00
Tame Oat	11.00@13.00
Alfalfa	9.00@11.00

GRAIN

Wholesale selling prices f. o. b. Los Angeles:

Corn, Yellow	2.20
Corn, White	2.30
Wheat	2.15
Oats, Red	1.85
Oats, White	1.65
Kaffir Corn	1.90
Millet	3.75
Popcorn	4.75@5.00
Egyptian Corn	2.05
Barley Seed	1.45
Milo Maize	2.00
Cal. Seed Oats	2.25
Sunflower Seed	5.25@5.35

FEED STUFF

Wholesale selling prices f. o. b. Los Angeles:

Bran, Heavy	1.55
Alfalfa Meal	1.05
Alfalfa Syrup, per cwt.	1.05
Beef Scraps	3.00@3.10
Beet Pulp	1.25
Cracked Corn, cwt.	2.25
Cracked Wheat, cwt.	2.30
Cotton Seed Meal	1.85
Bloodmeal	3.60@3.70
Bone Meal	2.00
Meat Meal	3.00
Sun Flower Seed	6.00@6.10
Bone Green	1.95@2.05
Charcoal	1.90@2.00
Oil Cake Meal	2.05
Fish Meal	3.15@3.25
Rolled Oats	1.90
Rolled Barley	1.35
Middlings	1.85
Feed Meal	2.30
Oat and Wheat Middlings	1.60

San Francisco Market

SAN FRANCISCO, Nov. 17, 1914.

BUTTER

Prices to trade, 4 cents above following quotations:

Extras	.34
Prime Firsts	.28
Firsts	.26
Seconds	.24

CHEESE

Wholesaler to retailer.

Oregon Y. Am.	.16
Young America	.15½@16½
California Flats	.10@16
Cheddar	.20
Oregon Twins	.14½

EGGS AND POULTRY

Prices to trade 3 cents higher than following quotations:

Extras	.50
Select Pullets	.37
Storage Extras	.37

Price to producer:

Hens	.15@18
Fryers	.19@20
Roosters, old	.12
Roosters, young	.16@17
Broilers	.19@21
Belgian Hares, lb.	.9@10
Turkeys	.17@21

LIVE STOCK

San Francisco prices, gross weight:

Steers	.4@7
Cows and Heifers	.3@6¼
Calves, lb., live weight	.6@8½
Hogs	.5@7½
Wethers	.5½@6
Ewes	.5@5½
Milk Lambs	.7@7¼

POTATOES

Wholesale selling price:

Delta, Burbanks	.60@80
Salinas Burbanks	1.40@1.50
Sweets, cwt.	1.35@1.50

ONIONS

Wholesale selling price:

Yellow, sack	.40@45
Garlic, new	.10@15

VEGETABLES

Wholesale selling price:

Beans—	
Wax	.3@5
Strings	.3@5
Limas, lb.	.3@4
Brussels Sprouts, lb.	.2@3½
Cabbage, cwt.	1.00@1.25
Carrots, sack	.30@40
Celery, doz.	.20@25
Corn, Green, sack	1.00@1.25
Cucumbers, lug	.35@65
Egg Plant, lug	.25@60
Lettuce, crate	.75@1.50
Peppers—	
Bell, lug	.35@40
Chili, lug	.30@40
Tomatoes, lug	.25@50

FRESH FRUIT

Apples—	
Bellflowers	.40@65
Spitzenbergs	.50@90
Jonathan	.40@75
White Winter Pearmains	.50@65
Crabapples	.25@50
Newtown Pippins	.50@90
Bananas, Hawaiian, bunch	1.25@2.00
Cranberries, bbl.	8.00@8.25
Figs—	
Black, double layer	1.00@1.15
Black	.50@75
Grapes, crate	.40@65
Huckleberries	.5@7
Pears—	
Winter Nelis, wrapped, box	1.25@1.50
Other varieties	.35@75
Pomegranates, box	.50@1.00
Pineapples	2.75@3.25
Persimmons	.50@90
Prunes, crate	.60@1.00
Quinces, box	.25@40

CITRUS FRUIT

Wholesale selling price:

Grapefruit, Seedless	1.75@2.50
New crop	2.00@2.75
Lemons	1.75@4.00
Lemonettes	1.00@2.00
Limes, case	3.00@5.00
Valencias	2.00@3.00

BEANS

Wholesale selling price:

Limas	5.25@5.35
Lady Washington	3.60@3.75
Pink	3.25@3.50
Black Eyes	4.10@4.30
Cranberry	3.80@4.00
Small White	4.30@4.50
Garbanzos	5.50@6.00
Large White	4.15@4.25
Bayou	4.70@4.80
Manchurian Speckled Bayous	3.50@3.75
Manchurian Butters	3.90@4.10
Manchurian Cranberry	4.00@4.25
Bayous, California	3.50@3.75
Red Mexican	5.40@5.50
Red Kidney	5.50
Horse Beans	3.00@4.00
Bayou, Mexican	4.00@4.25

HOPS

1914

Sacramento Valley	.8@10
Sonoma-Mendocino	.9½@11
Oregon Clusters	.9½@11

HAY

We quote the average wholesale prices on carload lots on today's market as follows:

Fancy Wheat Hay, lt. bales	12.00@13.00
No. 1 Wheat or Wheat and Oat	9.00@11.00
No. 2 Wheat or Wheat and Oat	6.00@8.50
Choice Tame Oat	10.50@12.00
Wheat, Cal. Club	1.95@2.00
Barley	5.00@7.50
Wild Oat	6.00@8.00
Alfalfa	6.00@9.00
Stock Hay	4.50@5.00
Straw	.30@45

GRAIN

Alfalfa Seed	.14@16
Wheat, Cal. Club	1.95@2.00
Corn, Eastern Yellow, blk	1.75@1.77½
Corn, Egyptian White	1.40@1.60
Barley, Feed	1.20@1.22½
Oats, White	1.55@1.60
Oats, Red, Feed	1.35@1.45
Millet	.3@3¾
Flax	.6@6½
Rye	1.50@1.60
Sunflower	.5@5½

FEED STUFF

Alfalfa Meal, car lots	12.50@13.50
Bran, ton	25.50@26.50
Feed Cornmeal, ton	40.00@41.00
Cracked Corn	40.00@41.00
Rolled Barley, ton	25.00@26.00
Rolled Oats, ton	37.00@37.50
Middlings	31.00@32.00
Shorts	26.50@27.50
Oilcake Meal	34.00@35.50
Cocoanut Oilcake Meal	23.00@24.00

Citrus Fruit Market

Los Angeles, November 18, 1914.

California orange shippers are showing good judgment this year and holding back immature fruit. The season is rather late this year, but the slower shipping is more to give to consumers a good taste for their fruit. The output will be great and from present indications will be of first quality. The Thanksgiving supply will be largely drawn from Valencias, which are still on track in various markets.

Central California shipments will be going forward more liberally next week.

Lemons are selling lower than for years at this date, this because of immense receipts of foreigns which sold as low as $1.40 in New York. As the cost to lay them on the wharf is about $1.50 it is apparent the importers are "making" money slowly.

Fancy California lemons are now commanding about $3.00 f.o.b. Shipments are made about as fast as fruit is cut from trees. The year's output will be the largest ever or from 6500 to 7000 cars.

Shipments

Shipments of oranges from Southern California to date since November 1, 234 cars; lemons, 158; total, 392. To same date last season: Oranges, 11; lemons, 31; total, 42. From Tulare County since November 1: Oranges, 57 cars; lemons, 28; total, 85. From Butte County: Oranges, 15. Total shipments from north of Tehachapi this same date about 150 cars.

NEW YORK, Nov. 16.—Eleven cars Valencias, one car lemons sold. Market strong and higher on Valencias, steady on lemons. Foggy.

VALENCIAS—	Avg.
Golden Cross, O. K. Ex	$4.30

Farm Produce, Eggs and Poultry

We are now located at address below and respectfully solicit consignments of all kinds of farm produce, including eggs and poultry. We guarantee to get the highest market price and remit promptly to shippers. A trial shipment solicited. We work on a commission basis, stating to shippers the amounts we receive for produce. We will give you a square deal. Send on your produce. FARMERS' UNION, Inc., of Arroyo Grande, Cal.

C. A. Cheadle, Mgr., Los Angeles Branch, 1235-37 E. 6th St., Los Angeles

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LOS ANGELES, CAL

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Placentia Perfection —— Eureka —— Franquette —— Mayette
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Whittier Cal.

Red X, O. K. Ex.	3.75
Blue U, O. K. Ex.	2.95
Florencia, Special Pack, Covina	4.05
Florencia, Covina	2.80
Moose, O. K. Ex.	4.00
Prong Horn, O. K. Ex.	3.60
Buck, O. K., Ex.	2.95
White Ensign, O. K. Ex.	2.00
Duquesne, A. C. G. C. Oak	3.85
Fort Pitt, A. C. G. C. Oak	3.40
Old Mill, A. C. G. C. Oak	2.85
Blue Globe, Riv. Ex.	3.70
Golden, Riv. Ex.	3.10
Cal. Orange, Riv. Ex.	2.20
Red C, Covina Ex.	2.90
Cougar, Covina Ex.	2.60
Carnival, S. T. Anaheim	3.30
Pointer, A. C. G. Ex.	2.95
Golden Scepter, Or. Ex.	2.85
Redskin	2.80
Standard, National O. Co.	2.70
Old Mission, xf., Chapman	4.70
Old Mission, fy., Chapman	4.20
Golden Eagle, Chapman	3.70
VALENCIAS—HALVES—	
Florencia	1.35
LEMONS—	
Pet, ventilated	3.70
Greyhound, ventilated	3.20

BOSTON, Nov. 16.—Three cars oranges, one car lemons sold. Raining. Market strong and higher on oranges, easier on lemons.

VALENCIAS—	Avg.
Pointer, A. C. G. Lateen S.	$3.65
Hunter, A. C. G. Lateen S.	2.90
Pinnacle, O. K. Upland	3.45
Majesty, O. K. Upland	2.80
George Washington, Or. Tustin	3.65
Martha Washington, Or. Tustin	3.35
LEMONS—	
Rey, S. T. Fernando	3.10
Tunnel	2.50

CLEVELAND, Nov. 16.—Two cars Valencias, one car lemons sold. Market is advancing on Valencias, declining on lemons. Cold. Three cars Floridas sold, averaging $1.40.

VALENCIAS—	Avg.
Red Ridinghood, S. D. C. Oak	$3.50
Colombo	3.20
LEMONS—	
Pet, S. D. Ex.	2.75
Moose, O. K. Upland	3.50
Prong Horn	2.95
Buck	2.70

PITTSBURGH, Nov. 16.—Two cars of oranges, one car lemons sold. Cool.

VALENCIAS—	Avg.
Pointer, A. C. G. Azuza	3.20
Hunter, A. C. G. Azusa	$3.05
LEMONS—	
Comet, Or. V. Park	2.55
Reflection	1.75

PHILADELPHIA, Nov. 16.—One car of Valencias, one car lemons sold. Market firm on good stock. Seventeen cars Floridas selling later.

VALENCIAS—	Avg.
Carmencita, S. T. Fullerton	$4.25
Colombo, S. T. Fullerton	3.55
Las Palmas, S. T. Fullerton	3.00
LEMONS—	
Lemoncove, C. C. L. Cove	3.40
Gateway	3.05

ST. LOUIS, Nov. 16.—Clear and cold. Market firm on good fruit; large sizes lemons; strong on Valencias. One car lemons sold. Six cars Floridas sold, $1.25 to $2.00.

LEMONS—	Avg.
Protection, C. C. Lemoncove	$3.30
Buckeye	2.90

CINCINNATI, Nov. 16.—No California citrus fruit sold. Six cars Floridas. Market advancing. Floridas averaged $1.45.

CHICAGO, Nov. 16.—Pacific Slope green fruits: Grapes, Tokay, cases 4 baskets, 50c@$1.00; Malaga, 60c@$1.15. Pears, boxes, 40 pounds, $1.50@3.25. Pomegranates, boxes, 25 pounds, $1.40@1.75. Figs, per pint, 75c. Apples, per barrel, No. 1 stock, $1.50@4.00; bulk apples, per 100 pounds, 50c@$1..0; boxes, western stock, 50c@$2.25. Grapefruit, boxes, $1.50@$2.00. Lemons, boxes, $1.50@4.75. Oranges, boxes, $1.75@4.50. Persimmons, cases. 12 pints, 50@65c. Pineapples, cases, 24@36, $2.00@3.00.

There is also the auto fool who thinks he can get over the grade crossing eighteen inches ahead of a locomotive; and he frequently stays there, distributed in wild profusion up and down the right of way.

It is a mistaken idea that ivy vines keep walls damp. They keep them dry, as the little suckers, which cling to the walls, suck the moisture from the walls instead of attracting it to them.

Plant Pears for profit. California Bartlett ripen earlier than Eastern and Northwestern grown pears. During their season they monopolize the markets of the United States and Canada.

Silva-Bergtholdt's

FOOT-HILL GROWN PEAR TREES

are practically immune from blight and have strong, hardy root systems; the foundation of all successful trees.

We have a fine block of Bartlett, Comice, Winter Nelis, Anjou and other varieties. Our buds are cut from selected parent trees.

THE SILVA-BERGTHOLDT CO.
"Fruit Tree Specialists"
P. O. Box A Newcastle, Cal.

RICE GROWING

(Continued from Page 489)

and the heads do not "fill" as well here, the Japanese varieties are grown almost exclusively, and the principal one is called Wateribune.

Experiments are being carried on to find some good yielding earlier maturing sort. This will surely be done and when it is it will be of great value to the rice industry.

Climatic Conditions

The weather requirement for rice is a long hot growing season with as little daily variation of temperature as possible. The very hottest of Sacramento Valley summers are most favorable. As has been noted, the season of 1914 has been an unfavorable one because too cool.

Rotation of Crops

A keynote in the perpetuation of the rice industry for the future is the working out of some rotation of crops to alternate with rice. No single crop grown continuously on the same land has ever been successful for a long period of years, and the rice crop should be less successful under a system of constant cropping because of the long period in which the soil is practically waterlogged.

Corn, sorghum and grains are suggested as alternate crops. The water table generally stands too high for alfalfa.

We believe that a system which must eventually come will be rice growing on a diversified stock farm. A part of the farm will be in rice each year and the rest in crops to be fed to stock. Corn for silage will doubtless be one of the most profitable of these. These crops will then be fed to stock in paved or covered yards. This will make a well balanced and continuously profitable industry.

The big speculators who put in from 300 to 2000 acres of rice per year will often be disappointed in yields because of the difficulties in getting a sufficient acreage well prepared, the period at which the soil is just right to work often being very short. Several big fields this year will not pay to harvest. The careful small farmer with a modest acreage (10 to 40 acres) well cared for will get the big per acre yield, and in the aggregate these small farmers are sure to be a big factor in the future of the industry.

Yields, Prices, Profits, etc.

A great many different stories are told about yields and profits. Actually returns this year will run from $35 per acre loss to $50 and higher per acre net profit.

A general average estimate of the cost of growing a rice crop is $35 per acre. A good yield is 4000 pounds per acre and the price has been about two cents per pound for the past ten years.

Land on which rice is being grown could have been bought a few years ago for from $10 to $40 per acre. Now the range is from $40 to $150.

Where crops are grown on shares by tenants, the owner furnishes the water and gets one-third of the crop.

There is much enthusiasm and great interest in rice growing now in the interior valley of California. Fabulous tales are told of profits. Owners of land suited to the crop are besieged with prospective tenants. The industry has come to stay, and it will be permanent, not on the boom representations of those who now see in it a great get-rich-quick scheme, but on the basis of a big conservative food producing business.

MATHEWS ORCHARD DISC PLOWS

This is a simple and compact plow of few parts. Can be had either with one or two discs. Works close up to trees. Will penetrate the hardest soils and the heaviest cover crops without any tendency to get out of the furrow. The front furrow wheel is easily pivoted for turning to or from trees.

The strong simple construction of this plow embodies many attractive features which add to ease of operation.

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Submit a list of your Needs for special quotations, meanwhile send for our Large 52-Page Catalog. It's Free for the Asking. Our Catalog, in addition to Fruit descriptions, gives complete planting instructions.

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Grafted Walnuts
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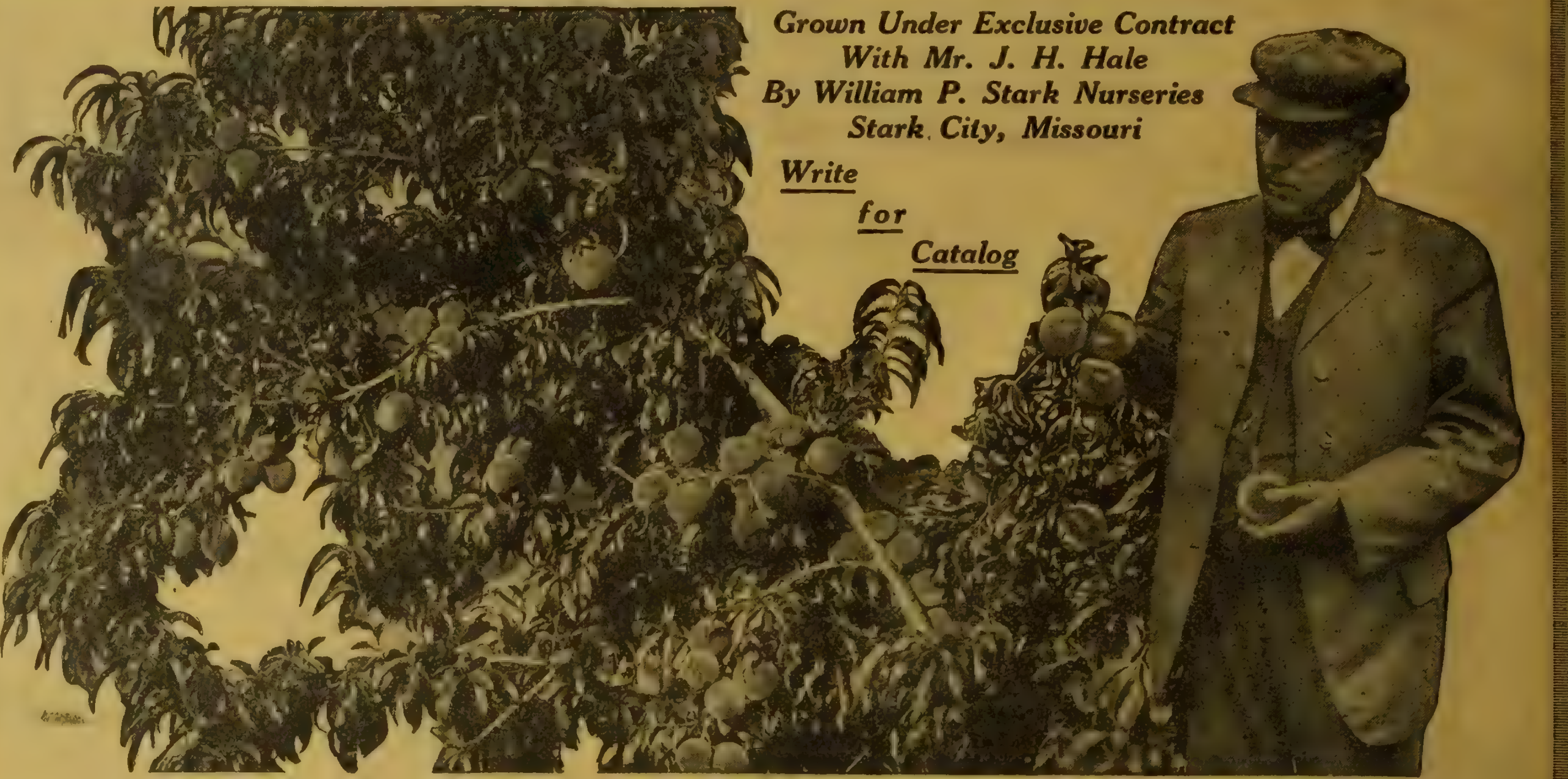

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With Mr. J. H. Hale
By William P. Stark Nurseries
Stark City, Missouri

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The J. H. Hale—America's Greatest Freestone Shipping Peach

Firm as a Cling, Yet Perfect Freestone. Round, Holds Shape. Unexcelled for Canning. Rich, Meaty Flesh, Weighs 12% More Than Elberta, ⅓ to ½ Larger, Ideal for Drying. Late Bloomer.

The Peach for Western Growers

Here is a peach that will ship immense distances. A peach round in form and regular in shape, that doesn't "rag out", or discolor syrup, matchless for canning. A peach of sweetness, heaviness and density of flesh admirable for drying. Study these qualities:

Size, 1-3 to 1-2 larger than Elberta
Weighs 12% more per bushel
Tight skin, *practically fuzzless*
Golden yellow color, carmine blush
Solid and firm. Won't "squash down"
Longer keeper, better shipper
Globular shape for canning
Brilliant clear syrup
Better flavor than Lemon Cling
Heavy, dense flesh for drying
Large size, cheapest to handle
Ripens early—hangs late
Late bloomer, for frosty regions

A few peaches have *some* qualities best fitted for Pacific Coast conditions. But here is a peach that embraces them *all*. Find out more about the amazing J. H. Hale. Send for the catalog. Get posted—NOW.

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Please mail me your 120-page catalog. I am interested in
☐ J. H. Hale Peach ☐ Delicious Apple
☐ Apples ☐ Plums ☐ Roses
☐ Peaches ☐ Cherries ☐ Ornamentals
☐ Pears ☐ Bush Fruits ☐ Strawberries

__________Approximate Number of trees desired.

*Name*__________

*Address*__________

What a California Expert Thinks

"The J. H. Hale is a very heavy, firm-fleshed peach—coarse fiber almost absent. Flesh solid yellow to the pit-wall, no excess of red at pit and no cavities around it. A variety that should prove of exceptional value in this state. If it persists in being as much larger than Elberta as is claimed it will be hard to hold in one hand in California."

Prof. E. J. Wickson, Dean College of Agr.
University of California

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As an orchardist looking for most profitable fruits, there is a golden opportunity for you in the J. H. Hale Peach. Read the complete story and description in our catalog. Our supply of J. H. Hale peach trees is limited. To get your trees you must *order early*. Ask about our special June-budded J. H. Hale peach trees for large planters.

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You who have wanted genuine Delicious can now get them, extra size, extra grade, with the famous William P. Stark quality, direct from our nursery and at nursery prices. Write for catalog showing complete list of tested, profitable apples.

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By ordering from catalog you do business with us direct. No salesmen's or agents' commissions and expenses to add to your tree-cost. Note the saving—it figures from ⅓ to ½. All prices printed in plain figures. *One price* to all.

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You need this compact, handy tree-book. Fits in your coat-pocket. Handsomely illustrated. Contains complete J. H. Hale story. Lists all good varieties apple, peach, pear, plum, cherry, apricot, quince, grape, bush-fruits, roses, ornamentals, etc. Send for it today.

Read What Our California Customers Say. Our Trees Pass All Inspection Laws. Safe Delivery Guaranteed.

Concord, Cal., Dec. 18, 1913.
Gentlemen:
Trees received and very much pleased with quality of both roots and tops. They were carefully examined by Government Inspector, and got a clean bill of health, also praise for the healthy, clean stock you send out.
WM. JUDGE

Corona, Cal., Jan. 31, 1914.
Gentlemen:
Shipment of 480 XX J. H. HALE peach trees arrived in excellent condition. Passed rigid Horticultural inspection. All very much pleased.
H. G. SALISBURY

Stevison, Cal., Feb. 10, 1914.
Gentlemen: I received the trees in good shape, in fact, in better shape than I can get stock right here. I was ready to plant the day they arrived, and I am certain they will grow, as ground is in best of shape.
S. N. NELSON

Willits, Cal.
Gentlemen:
Our inspector did not open the trees, as he said he was sure all trees coming from the William P. Stark Nurseries were all O. K. He is from Missouri and has been through the William P. Stark Nurseries.
MRS. M. R. MEAD

William P. Stark Nurseries

Box 773 **Stark City, Mo.**

DEC 1 1914

CALIFORNIA CULTIVATOR

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LOS ANGELES November 26, 1914 SAN FRANCISCO

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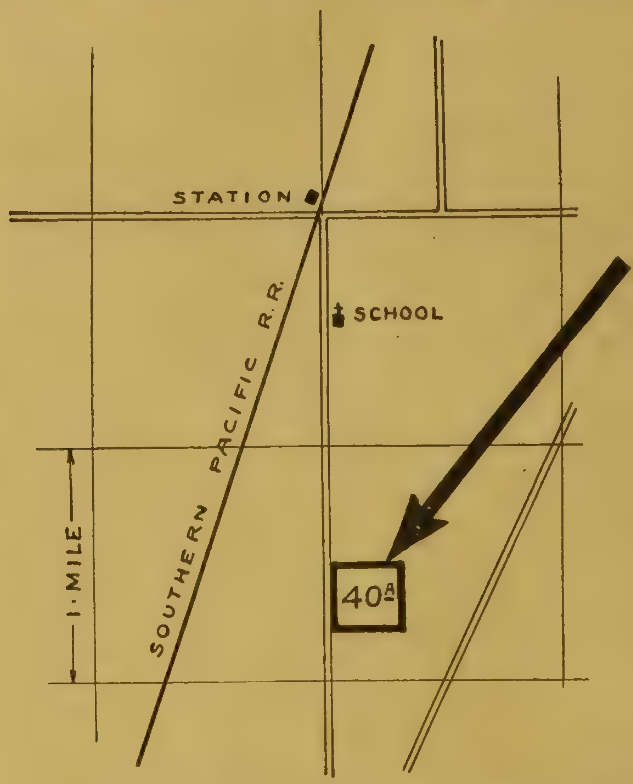

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Vol. XLIII No. 22 LOS ANGELES: THURSDAY, NOVEMBER 26, 1914 One Dollar Yearly

Drainage and Alkali Reclamation

An Address by Frank Adams Before a Former State Fruit Growers Convention

During the past 15 or 20 years the owners of western irrigated lands and the communities dependent on them for prosperity have quite generally come to realize that drainage is almost as fundamental, even if not fully so, as irrigation. Many hundreds of thousands of acres of once highly productive lands have acre by acre been rendered wholly or partially non-productive through an excess of ground water in the feeding zones of plants and the consequent concentration at or near the surface of excessive quantities of alkali.

While this condition obtains in every western state, it is usually localized in those sections of each state where considerable quantities of water have been or are now being used, where the irrigated lands are relatively flat and distant from ample natural drainage channels, or where lands are so situated with reference to canals as to receive lateral seepage from them, as, for instance, when they lie at the base of relatively steep slopes across which canals are run.

If the excess of water that causes injury to a farm were merely that which the farmer himself applies in irrigation to his own farm over and above the immediate needs of his crops, little general injury would be likely to occur, because few farmers would continue long to add water to land already excessively moist. But it is usually the water that seeps from canals or from higher irrigated lands, and the coming of which the individual cannot prevent, that does the damage.

Drainage Methods.

It would not be worth while to give a detailed description of the various methods that have been developed in this country for draining irrigated lands, even if the writer were a specialist on that subject. Those interested can obtain far more information than I can give by reading the various drainage publications issued by the irrigation and drainage investigations of the United States department of agriculture, all of which can be obtained free on application to the secretary of agriculture at Washington. A few general observations as to methods may, however, be in place here, especially as they may aid in making clear the results of specific drainage experiments conducted by the irrigation and drainage investigations and the state engineering department of California near Fresno to be taken up later in this paper.

Since the condition that makes drainage necessary is not due to the water applied directly in irrigation, but rather to the water that seeps from canals or higher over-irrigated ground, the fundamental process in drainage is to intercept the excess water in its lateral percolation along some hard or relatively impervious sub-stratum or in its rise in the form of ground water. Consequently the location and depth of drains is of prime importance. If it is feasible to intercept lateral seepage water before it reaches a point of injury, it is obvious that before locating drains the sub-surface conditions must be looked into with great care. This simple fact is mentioned here because, according to those who have been conducting drainage investigations it is very frequently overlooked. On the other hand, if the injury comes directly from below, by the rise of ground water, it is plain that drains must be large enough and deep enough and, if of tile, so carefully laid as to both alignment and grade, that they will not clog, but will hold the ground water low enough to give ample feeding room for plant roots and generally to prevent the rise of water by capillarity and the consequent accumulation of alkali on the surface. In damaged irrigated fields experience has shown that six feet is about a minimum depth for tile drains.

Where the adverse condition of excessive moisture has obtained sufficiently long to result in an excess of alkali, it is evident that in addition to drainage, assuming the natural precipitation is not sufficiently heavy to accomplish reclamation within a reasonable time, surface flooding is necessary to wash out the excessive salts. Sometimes both drains to intercept lateral percolation and drains to lower the ground water coming up from below are necessary in the same field. Again, where it is not practicable to place drains deep enough to collect water pressing up from below, drainage engineers consider it feasible to excavate pits four feet or more deep at intervals directly beneath the drains which when filled with gravel readily carry the water up to the level of the drains. Occasionally when water seeps laterally through gravel before reaching and causing injury to a field, collecting or "relief" wells in the gravel are sunk and connected to the drainage system. Where drainage waters cannot readily be discharged by gravity it has been found feasible to collect them into sumps from which they can be pumped into irrigation canals or other surface channels lying above the level at which it is desired to maintain the ground water.

Drainage Experiments In Other States.

Since about 1901 the irrigation and drainage investigations of the department of agriculture have been conducting drainage experiments in the western states, until recently mostly under the immediate direction of Mr. C. G. Elliott, who for some years was chief of drainage investigations. Experiments conducted near Fresno under the direction of Dr. Samuel Fortier, chief of irrigation investigations, will form a later subject in this paper, but before taking them up it may be of interest to cite some of the results obtained elsewhere. Only brief mention will be made of such results as are cited because the experiments are described in detail in Farmers' Bulletin No. 371 and in a reprint from the annual report of the office of experiment stations for 1910, entitled "Development of Methods of Draining Irrigated Lands."

Eleven separate drainage experiments were carried on in Utah from 1904 to 1908, with some of them still in progress. A few of these only will be mentioned.

Hyde Park Experiment.

This covered two separate holdings totaling about 31.5 acres in an affected belt of 2000 acres, between Hyde Park and Logan, on which satisfactory yields had been obtained for 20 years prior to damage by seepage. The soil was black loam underlaid with yellow clay, both of an open nature. First cereals and root crops gave way on account of seepage to hay grasses, the latter in turn being replaced by water grasses. Lines of 8-inch and 6-inch tile were laid 4 to 4.7 feet deep along the upper edge of the experimental tract to intercept the seepage from the higher lands adjoining, and a line of 5-inch tile was placed four feet deep lower down to care for the seepage that passed the upper line. Since drainage yields of 50 bushels of wheat, 100 bushels of oats and 18 tons of sugar beets per acre have been taken from the reclaimed land. The average cost per acre for drainage was $15.60.

Garland Experiment.

The area treated here was 60 acres, the soil being clay loam underlain by separate strata of sand and clay and pockets of sand, and the tract itself being part of a flat depression separated from Bear River canal by a stretch of sandy lands. The source of excess water was seepage from irrigation and the canal. Trouble began with a season of sub-irrigation when the crops were record-breakers. Then several acres became drowned out. Eleven farmers joined the department of agriculture in the drainage experiment. Both intercepting and outlet drains were used. Five-inch and 6-inch tile placed four feet deep led to 8-inch and 10-inch main outlets. The resulting improvement in this tract after drainage was very marked, not a trace of alkali showing. The average cost per acre was $16.87. Since this experiment was concluded a drain-tile factory has been built by neighboring farmers, because the tile the experiment proved were necessary could not be obtained within a convenient shipping distance. In addition hand labor has been displaced in some cases by steam trenching machines suitable to the soil present and which excavate the trench to the full required depth at one passage.

Richfield Experiment.

This covered 80 acres in central Utah, the tract having a gentle slope of about one foot in 200. The source of seepage water was lateral percolation through a sand sub-stratum from higher lands. Two parallel lines of 5-inch and 6-inch tile were laid 600 feet apart across the slope, with a few laterals of 4-inch tile to tap particular spots. The average depth was 5 feet. An open-trench outlet, first proposed to reduce cost, was replaced by a 10-inch pipe drain. Only the very highest portion of the 80-acre field was producing crops when the experiment was undertaken, the balance being covered with salt grass. After the work was completed a great deal of water was discharged, apparently from every part of the system, damp spots becoming dry, and the spread of alkali stopped. The writer has not at hand the results of this experiment to date, but conditions were reported so gratifying that other projects were undertaken in the same locality, including the formation of a drainage district of 1000 acres. One of the farmers in the tract subjected his land to a thorough leaching process and was confident of general success. The acre-cost in this experiment was $14.02.

Experiments Near Fresno.

It is not necessary to multiply instances from other states of successful experiments in draining irrigated land injuriously affected by the rise of ground water and alkali accumulations. This is especially the case since, as already mentioned, experiments have been conducted in the near vicinity of Fresno. The first work done here was on the Taft and Hansen farms at Fig and Central avenues, three miles south of the city, and was under the bureau of soils of the department of agriculture. The plan was to drain into a sump and then lift the drainage water into Central canal by means of a three-inch centrifugal pump operated by a water wheel in the canal. The first tile installation was partially unsatisfactory, but it was replaced by a larger one. The pump was operated for several years whenever there was water in Central canal to turn the water wheel. This was not sufficiently steady, however, to hold the ground water at a sufficiently low level, because during the season of high ground water here a few hours only are required after stopping a drainage pump to have the ground water reach its former level. In 1908, owing to the unsatisfactory power supplied by the current wheel in the canal, a portion of this tract was connected with

(Continued on page 522)

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Citrus and Tropical Fruits

IMPROVEMENT OF CITRUS FRUITS BY BUD SELECTION

By A. D. Shamel, before State Fruit Growers at Davis.

THE problems arising from the behavior of bud propagated plants is receiving more attention now than ever before in the history of horticulture. The writer believes that we are entering upon an era in which as important discoveries will be made in this respect as those of Darwin, Mendel, De Vries and others in the reproduction and propagation of seed bearing plants.

The writer wishes to make clear that in this paper he does not recommend any particular method, draw any final conclusions, or state final results or fundamental principles, but will attempt only the presentation of observations and methods as suggestions for the considerations of interested citrus growers. About 90 per cent of the time of our staff is spent in the citrus orchards making observations at first hand of the behavior of trees and fruits. In the writer's opinion this method is the only one by which any valuable information can be secured.

Varieties

The Washington navel orange was the variety first selected for study by the writer in 1909. It is the most important citrus variety in California or elsewhere. It was first introduced in California in 1875 and the facts concerning its origin, introduction and development are known. From its peculiar navel character and seedlessness, being propagated only by budding, different types in this variety cannot be ascribed to any failure of buds to grow during propagation. Very frequently the writer has had deciduous fruit growers ascribe a new or different type of tree in an orchard to the failure of the inserted bud to grow, hence the new type is said to be simply the original seedling in which the bud was inserted. This has been the almost universal explanation of the appearance of a new type in established orchards. This theory or explanation is open to serious objection and criticism and in several specific cases investigation in deciduous and citrus fruits has been disproved. The types of Washington navel orange cannot by any stretch of immagination be accounted for by this stock and handy theory. For these and other reasons this variety is particularly well adapted for study in this connection.

While prosecuting our investigations and studies of navel orange trees our attention was called to the condition of the Marsh's seedless grape fruit variety, the leading commercial variety of this fruit in California. In view of the rapidily awakening interest in this variety and fruit in the state, and its diversity of type, a careful study of this variety was begun in 1910.

Naturally the condition of other important citrus varieties and the comparative behavior of existing types of these varieties came to our attention as our knowledge of the Washington navel orange increased as a result of continued observation. The Valencia orange, Eureka and Lisbon lemon and the Dancy tangerine varieties were added to the list of varieties under systematic observation in the order named. Some cooperative observations are being collected in the behavior of the so-called sweet seedling variety which was introduced into California by the Franciscan missionaries about 1769, some of the original trees still existing in the vicinity of the old missions. Other less important commercial but interesting citrus varieties will be studied as soon as opportunity permits, particularly the so-called blood orange, Villafranca lemon, and certain tangerine varieties.

The established commercially important varieties of the citrus grown in California have been adopted by growers as a result of practical experience and experimental trials. The quality of the fruit produced by these varieties has been found so satisfactory that it is not probable that they will be supplanted in the near future. It is possible, however, that supplemental varieties adapted to particular soil and climatic conditions will be found to be of great value, and will be introduced after careful experimental trials.

Stocks

Most of the varieties which we are studying have been propagated on the mission sweet seedling orange stocks. In some instances, however, the lemon varieties have been budded on the bigarade or Florida sour orange stocks. The seeds of the bigarade orange have usually been imported from the Florida hammocks, and stocks raised from these seeds are said to be resistant to gum disease under some conditions of soil and climate in California. Another stock which has been used to a considerable extent commercially in California recently is grape fruit. The varieties of grape fruit used for this purpose are usually the more heavily seeded sorts. Observations are being made of the behavior of our commercial varieties budded on this stock.

Another problem in this connection is the behavior of commercial varieties on stocks where the original sort has been rebudded to another citrus variety. It has frequently occurred, for instance, that a nursery budded to lemons has been rebudded to oranges one or two years after the original budding. Usually the rebudding has been done a few inchces above the original lemon buds, so that in the trunks of the established trees a small section of lemon wood remains between the stock and the orange wood. The section of lemon or orange wood has been called a "sandwich." The behavior of some orange trees having this condition, as shown by our performance records and other observations, suggests that this "sandwich" may play an important part in the life history of the trees. The most extensively used stock in orchards under observation is the mission sweet seedling, which was adopted as a result of the experience by growers with this and other stocks.

Location

The selection of locations for direct experimental observations or for co-operative work has been based on the proven adaptability of these locations for the production of the typical and most valuable crops of the varieties under observation. In the selection of experimental observation plots for detailed performance records, the greatest possible care has been used to provide fair comparative conditions, and where any possible influence of local environmental or cultural conditions has been reduced to the minimum. In most cases the general or orchard source of buds from which the trees have been grown is known and they are in existence for additional study. Naturally it is impossible for us to know all the facts about the propagation of all the orchards, as such knowledge can only be gained by careful performance and pedigree records, which have not been introduced or used until recently. However, sufficient facts about the propagation and culture of these orchards exist to prove their adaptability for this work and the reliability of evidence secured from them.

It is our desire to increase the number of locations for this work, including every important citrus district in the state if means for carrying on this work can be obtained. To do this practically it will need one specialist for each district. One man in a district can secure systematic and detailed performance records from several plots and from several varieties. In view of the close and regular daily observations needed during the picking season, in each plot, and the importance of frequent observations at other seasons, one person cannot well attempt to carry on work in several different districts.

It will be very desirable to carry on careful performance records in different districts because of the well known influence of soil, climatic and environmental conditions on the behavior of citrus varieties as a whole. The extension of our studies in this connection will likely depend on the interest of the growers in the subject in different localities.

Types

We use the term citrus types to describe groups of trees of a given variety in our established orchards possessing similar important characteristic habits of growth, production, or other fundamental commercial or other characters. The differences between the types is less than the difference between varieties. In other words, we have considered types as offshoots from the variety, retaining certain fundamental varietal characteristics, but differing from the standards of the varieties and from each other in important commercial characteristics. For instance, the fruits of the several types of the Washington navel orange all possess navels, but differ in color, shape, size texture, quality, time of ripening and other commercial characters.

Our discovery of the frequency of the occurrence of diverse types in our established orchards, and their relation to commercial citrus culture is the basis upon which our work in this connection has been founded. As the types which we have discovered do not all occur in any given variety in any one orchard, it is safe to assume that many types exist which we have not found as yet. The discovery of the types under observation has been a gradual matter, as our knowledge of varieties has grown, so that it is equally safe to assume that types exist in the orchards under observation which we have not recognized as yet.

We use the term type to include only the variations from the variety which occur frequently and are commercially important, and not the almost innumerable occasional variations which we find in citrus orchards. These more or less infrequent cases are collectively called sports or variations for want of a better name.

We have under observation at present eleven types of the Washington navel orange, five types of the Marsh's seedless grape fruit, seven types of the Eureka lemon, five types of the Lisbon lemon, eleven types of the Valencia orange and three types of the Dancy tangerine; a total of forty-two citrus types in all. Some types are, relatively speaking, of much greater commercial importance than others, and some types occur much more frequently than others, but all included in the above list are of practical and commercial importance. It is also true that the frequency of appearance of these types varies in different orchards, some orchards containing many while other orchards contain only a few.

Type Characteristics

One of the characteristics that differentiate citrus types is the habit of tree growth. For instance, the so-called Australian type of the Washington navel orange has the well known upright habit of growth as well as a more rapid rate of growth than other types of this variety. The so-called shade tree type of the Eureka lemon has a peculiar spreading habit of growth that identifies it clearly, and as in the case of the Australian navel type, it stands out so markedly that the trees of this type can be seen from a distance. The seeded type of Marsh's seedless grape fruit trees have a drooping habit of growth that once recognized is unmistakable. The barren type of the Valencia orange trees have a peculiar fine branching arrangement and dense habit of growth that is very characteristic, as is the case with the barren type of navel orange.

The shape of fruit is an interesting distinguishing type character, as for instance the yellow navel, the reddish color of the Thomson navel, the striped appearance of the variegated lemon, the yellowish green color of the rough type of the Valencia orange and many other instances of similar characteristic type color of the ripe fruits.

The shape of fruti is an interesting type marking, as in the case of the egg shape of the standard Washington navel fruits in comparison with the pear shape of the golden nugget type, globular shape of the yellow

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navel type, and the flattened wrinkled shape of the common Australian navel type fruits.

The size of fruits is another type characteristic, as for instance the standard ivory white Marsh's seedless grape fruit type in comparison with the large seeded type of this variety.

The texture of the rind of fruits is another important type character, as in the case of the rough ridged Valencia type in comparison with the wrinkled type, the standard type and the very smooth small fruit Valencia orange type. Also the corrugated navel type in comparison with the ribbed, the smooth Thomson, and the coarse rough Australian types.

The number of seeds is still another most important type character, as in the case of the seeded Marsh's seedless grape fruit type having from fifty to sixty seeds in each fruit, and the standard type having but one or two seeds per fruit. In all the types of the varieties under observation we find seedless types and seeded types, the average number of seeds being a clear cut type characteristic.

The time of fruiting varies according to type, as for instance some types of Eureka lemons bear fruit ready for picking in the fall, others produce their crop in the spring and summer while other types produce fruits all the year.

The thickness of rind, amount of rag, sugar and acid content and amount of juice, flavor and other characters we find to be correlated with type characteristics.

By all means the most important type character is the amount of production. Production we have found to be correlated with types in all varieties, some being characteristically large and others small bearers. In the orchards under observation the elimination of all unproductive types and a substitution of the productive types would mean an increase of one hundred per cent in production and a corresponding improvement of the commercial quality of the crops.

We have found as a rule that the heaviest producing types produce the best and most valuable commercial fruits. The importance of this discovery can be readily appreciated by all growers.

Our records of comparative type behavior will prove of great interest to citrus growers. A personal inspection of these types in the orchards and a study of their characteristics will certainly be beneficial to all orchardists.

(To be continued).

Olives are being put up by the Hemet cannery this year for the first time.

PHOSPHATE ROCK IN FLORIDA

In 1894 Florida as a producer of phosphate rock outstripped South Carolina, which, prior to the development of the Florida deposits, had enjoyed a practical monopoly of phosphate rock mining. The value of the phosphate production of Florida now approximates $10,000,000 annually. In the early days of the industry in Florida four kinds of phosphate rock were produced, namely, hard rock, soft rock, land pebble, and river pebble. Soft rock, which is of a much lower grade than the other types, has not been mined for several years, and only an insignificant amount of river pebble is produced at the present time. Land pebble constitutes approximately 80 per cent of the total quantity produced, but only about two-thirds of the total value. Hard rock is generally of higher grade than pebble and brings about twice as much per ton to the producers.

Hard Rock Most Valuable

At one time the only phosphate for which there was any demand for export was hard rock, but in recent years the grade of land pebble has been materially improved by methods of mining and treatment before shipment, and the exports of the Florida rock now include not only practically all the hard rock produced but also about one-third of the land pebble. The total production of hard rock in 1913 was 489,794 long tons, valued at $2,987,274, an average of $6.10 a ton. The production of pebble, which includes an insignificant quantity of river pebble, was 2,055,482 long tons, valued at $6,575,810, an average of $3.20 a ton. Florida's relative importance as a producer of phosphate rock is indicated by the fact that both in quantity and value it contributes more than 80 per cent of the total production of phosphate rock in the United States.

CITRUS CANKER

Replying to an inquiry from Florida, we recently gave some information on citrus canker. In addition, we wrote to Prof. Fawcett, who has had wide experience in Florida orchards, and asked regarding this trouble. He writes:

"In reply to your letter of October 19th, in regard to citrus canker, this is being thoroughly investigated by the Florida experiment station and by some of the pathologists of some of the Gulf States. The following bulletins and publications have been issued on this subject: Citrus Canker Bulletin 122, Florida agricultural experiment station; Circular 27, Alabama agricultural experiment station; Bulletin 150, Lousiana agricultural experiment station, and an article on citrus canker in the proceedings of the Florida State Horticultural Society for 1914. The Florida Grower has published some recent information in regard to this subject in Florida. Judging from these in the Grower I do not think there is any remedy advocated other than the entire destruction of the tree.

"As regards your question about the probability of the pest being introduced into California under present conditions, I do not believe there is any danger under our quarantine laws."

Deciduous Fruits

MARKETING THE APPLE CROP

According to the office of markets, department of agriculture, present indications are that the commercial apple crop of the United States is much larger this year than last, but less than that of 1912 by several million barrels. However, it is estimated in the current number of the Agricultural Outlook of the department that the problem of distribution will prove to be more complex than two years ago, owing to certain conditions resulting from the European war.

Attention is called to the small quantity of American apples — less than 2,000,000 barrels—taken by Europe in normal times. Both the growers and dealers are urged to view the situation with optimism and to prepare for the disposal of Europe's usual portion in other ways. It is suggested that with judicious handling the demand at home may be increased and the commercial crop marketed with relatively fair success to all. As to just what constitutes judicious handling the office of markets makes the following suggestions:

Growers should pick the fruit in uniform condition, gleaning the trees only for what is ready to come off, repeating the process until the crop is harvested. The advantage is to secure a longer time for distribution and to prevent the pack from representing extreme stages of maturity ranging from ripe to green.

When picked the fruit should be handled from orchard to cars in such a way as to prevent deterioration, care being exercised to protect the apples from the elements. It is explained that under proper conditions fruit which is picked today should not be packed until tomorow, and that for this purpose shelter should be provided.

Inferior grades should be eliminated from the green fruit markets, not only for the reason that the demand for such grades will be very limited, but also because their presence in the markets will undoubtedly hamper profitable disposition of the better fruit.

All apple growers, operators, dealers and associations should early arrive at an estimate of true values in order to secure a quick movement. It is explained that if arbitrarily high prices rule in the beginning of the season the crop will not pass readily into consumption, but that on the other hand abnormal accumulation and congestion will occur throughout the channels of trade with disastrous results to all concerned.

Only standard varieties well packed should be placed in cold storage for the reason that prices likely to rule in the late fall and early winter, as the inevitable result of liberal offerings of common storage stock, will probably limit the demand for cold storage apples until midwinter.

An effort should be made to fully supply small towns by direct sales in order to secure a more uniform distribution and avoid congesting the large markets. Attention is called to the practice in some sections of growers who go with cars of apples to poorly supplied towns and sell on the track. Growers or dealers who desire to use this system should apply to the town and railway authorities for information as to regulations controlling such sales, and if conditions justify shipping the arrival of the car should be preceded by judicious advertising.

Growers who live in communities where cooperative organizations are active should do all possible to strengthen these exchanges. It is asserted that the disloyalty of members is the chief element of failure in cooperative enterprises, and growers are strongly urged to support their association as the best way to effect satisfactory distribution.

Those who grade, pack and brand their packages in accordance with provisions of the Sulzer law should be more successful in making quick and satisfactory sales than otherwise. When apples are packed in a standard barrel as established by section 1 of the Sulzer law, and are plainly and conspicuously marked as containing one barrel of apples of one of the standard grades described in section 2, such a statement, if true, would constitute a satisfactoy compliance with the net weight amendment to the food and drugs act. Otherwise the package, if intended for interstate commerce, must be marked to comply with the net weight amendment to show the quantity of the contents, either by weight or by dry measure or by numerical count. A statement of numerical count must be qualified by the size of the apples expressed as the average diameter in inches to be a statement of quantity.

With respect to Europe, the office of markets urges exporters to carefully watch the movement and assure themselves of steamer space and a demand on the other side before making shipments. Latest announcements of steamship companies are to the effect that fairly regular schedules will be maintained between America and the United Kingdom. American apple shippers are advised to stimulate the demand and increase their shipments to Latin America and the Orient.

For the benefit of those who may not be disposed to exercise especial care in handling the crop, on the grounds that it will not be worth while, the office of markets suggests it as probably being true of this year that not only proper handling, but also great diligence will be required for effecting satisfactory distribution.

CONCENTRATED APPLE CIDER

The specialists of the fruit and vegetable utilization laboratory of the department of agriculture have completed arrangements for a commercial test of the recently discovered method of concentrating apple cider by freezing and centrifugal methods. As a result a cider mill in the Hood River Valley, Oregon, will this fall undertake to manufacture and test on the retail market 1000 gallons of concentrated cider, which will represent 5000 gallons of ordinary apple cider with only the water removed.

The new method it is believed makes possible the concentrating of cider in such a way that it will keep better than raw cider and also be so reduced in bulk that it can be shipped profitably long distances from the apple growing regions. The old attempts to concentrate cider by boiling have been failures because heat destroys the delicate flavor. Under the new method nothing is taken from the cider but the water, and the resultant product is a thick liquid which contains all the apple juice products and which can be restored to excellent sweet cider by the simple addition of four parts of water. The shippers and consumers, therefore, avoid paying freight on the water in ordinary cider. In addition,

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the product when properly barreled, because of its higher amount of sugar, keeps better than raw cider, which quickly turns to vinegar.

The process as described by the department's specialists consists of freezing ordinary cider solid. The cider ice is then crushed and put into centrifugal machines such as are used in making cane sugar. When the cider ice is whirled rapidly the concentrated juice is thrown off and collected. The water remains in the machine as ice.

At ordinary household refrigerator temperatures this syrup-like cider will keep perfectly for a month or six weeks, and if kept at low temperatures in cold storage will keep for prolonged periods. At ordinary house temperatures it, of course, will keep a shorter time.

To make the concentrated syrup, the cider mill must add to its equipment an ice-making machine and centrifugal machinery, so that the process is not practicable on a small scale. The specialists are hopeful, however, that the commercial test soon to be inaugurated in Oregon will show that it will be possible for apple growers to concentrate their excess cider and ship it profitably to the far south or to other non-producing regions. The specialists also believe that it will enable apple producers to prolong the market for cider.

PEACH TROUBLES

Written for California Cultivator
By J. W. Mills

Queries have come to us from Southern California regarding young peach trees dying and big and little peaches on the same tree.

As to the former we will say that there are many reasons for peach trees dying and one that causes a slow death in many cases is root knot.

About the period of 1897, Southern California was very dry, and the wet season following brought some serious peach troubles, perhaps, more correctly speaking, troubles originating during the dry season began to come to a climax during the wet period. Many promising peach orchards near Pomona were affected wtih dieback, and cases of trees setting good crops that failed to make good sizes were common. Some trees would have large and small fruit all over them. Our observation convinced us that the small fruits were the result of delayed bloom. Some of the blossom buds would not open till the first had set fruit. This we were convinced was due to warm growing weather in February and March, followed by cold chilling weather. We had peach trees that bloomed and matured some inferior fruit on branches that never put out a leaf during the whole growing season. One season some peach trees were still producing blossoms in July. These never matured fruit; but the small fruit that grew on the trees with large fruit was undoubtedly the result of slightly delayed bloom. This trouble will devitalize the tree if kept up for a number of consecutive years and the trees will die a slow death. Should cold weather continue into late spring the peach tree will come up to normal behavior again. This was our experience during our 14 years of observation in Southern California. We also observed that peach varieties that were native to the south were not affected in this way. For instance, Jewell, Pansy Pabor, Countess, Belle of Georgia and others of this class came out in bloom and leaf and kept on growing regardless of the weather and always matured normal crops of fruit.

DRONE TREES IN ORCHARDS

I enclose a copy of a recent letter appearing in the Rural New-Yorker. The experience of the writer of this letter in top working drone trees is very interesting to me in its relation to our work along similar lines with the citrus. We have had comparable results to those of the writer of this letter, in that we have not failed in a single case as yet to replace drone citrus trees with productive citrus trees by rebudding the drone trees with buds taken from productive types.

It occurred to me that in view of the interest of many citrus growers in work of this character, you might wish to publish this letter as a matter of general information on this subject.—A. D. Shamel.

* * *

"Every orchardist nas drone trees unless exceptionally fortunate. My own share of them has been more than liberal, and since they are usually of strong and vigorous growth, my plan has been to put new tops on them by selecting buds from trees that were satisfactory producers. The method used has been to prune severely in spring and force out a liberal growth of shoots on the stem of the tree. These shoots are budded during the ensuing summer and allowed to start into growth the same season and continue such growth during the following year. Then the top of the tree is sawed off just above the strongest bud-shoot, which is usually one of the uppermost. From six to a dozen buds are usually put in, and the new shoots are from three to six feet in length when the top is taken off. After that growth is rapid and bearing soon begins. A number of trees on my place, peach, pear, plum, persimmon and pecan, have been treated in this way, and in every instance subsequent fruitage has met expectation. A season seldom passes that one or more trees are not worked in this way. No longer ago than last April a lusty young persimmon and strong-growing eight-year-old Mobile pecan were worked with dormant buds, not because they were drones, for they were both exceedingly prolific; but their fruitage was inferior. The stems of these trees are now bristling with bud-shoots two to four feet in length, while about one-fourth of the original top is still growing and fruiting above. When the remainder of these tops is taken off next spring these bud-shoots will grow surprisingly fast and new fruits will be expected a season later. Then if the new persimmons and new pecans are not approximately equal in quality to those produced by the mother trees from which the buds were taken, it will be the first failure in a long experience.

"To dig up or cut out a healthy, strong-growing drone tree is a waste. Why, indeed, may they not be budded as readily and with as good results as an ordinary small seedling? The 'scientists' who deny this have gone foul on their science. On the drone tree proposition I am prepared to show the goods in quantity sufficient to convince the most obtuse or incredulous Missourian."

Hot lemonade is one of the best remedies in the world for a cold. It acts promptly and effectively and has no unpleasant after effects.

CORRECT COST OF ORCHARD MANAGEMENT

What does it cost to run an orchard? A plan of cost accounting for apple orchard operations for fruit growers wishing to find out the annual cost of managing an orchard has been outlined by the United States department of agriculture. The method presented is the result of records covering 19 years' work in several New York orchards. The bulletin gives details for two years' work on one of these orchards. The method is applicable to all similar operations. The result of the study is given in great detail in the department's new bulletin (No. 130), entitled "Operating Costs of a Well-Established New York Apple Orchard."

The orchard for which the details are given is over 50 years old and well located for the production of fruit. It consists of nearly 15 acres and contains 527 trees. The total annual cost of the operation of the orchard during the two years covered by the detailed studies was divided into labor, cash, and fixed costs. Nine hundred and thirty-seven marketable barrels of apples were produced the first season for a total operating cost of $1,217.92. Two thousand one hundred and four barrels were produced the second year at a total expense of $2,125.69. In the table given below, the labor costs refer to the man and horse labor; the cash costs cover the expense of manure, spraying, barrels and seed for cover crop; the fixed costs include the use of machinery, land rental and overhead expenses. The distribution of costs in the orchard during the two years was as follows:

	FIRST YEAR				SECOND YEAR			
Item of cost.	Total.	Per Acre.	Per Tree.	Per Barrel.	Total.	Per Acre.	Per Tree.	Per Barrel.
Labor	$ 504.91	$34.254	$0.958	$0.539	$ 856.66	$ 58.118	$1.625	$0.407
Cash	418.10	28.364	.793	.446	966.57	65.574	1.834	.459
Fixed cost	294.91	20.007	.559	.315	302.46	20.520	.574	.144
Total	$1,217.92	$82.625	$2.310	$1.300	$2,125.69	$144.212	$4.033	$1.010

Two elements of cost have not been measured in these estimates—namely, the cost of creating the orchard and the depreciation of the orchard as its production declines as the result of advancing age. The presence of insect pests and fungous diseases and the thoroughness of their control also will have their influence on the life of the orchard. The two years' study on the farm in question have not yielded sufficient data on this particular item to warrant definite conclusions. All apple growers, therefore, should bear this factor in mind.

The item included under "fixed" costs should vary little from year to year. The land rental, including interest and taxes, is about 6 per cent. For this particular orchard it will be noted that the fixed costs approximate $20 a year per acre.

The details of the items of cash costs are as follows:

CASH COSTS ON 14.74-ACRE APPLE ORCHARD, CONTAINING 527 TREES, FOR TWO YEARS

FIRST YEAR		Distribution of Cost.			
Item of Cost.	Spray.	Total.	Per Acre.	Per Tree.	Per Barrel.
Manure charge (50 per cent against 1911 apples)	.....	$ 30.77	$ 2.087	$0.058	$0.033
Spray materials used:					
First spraying—					
Lime and sulphur, 40 gallons at $0.04 (1)	$ 1.60				
Lime and sulphur, 100 gallons at $0.16 (2)	16.00				
Tobacco extract, 3 pints at $1.562	4.69				
Lead arsenate, 32 pounds at $0.08	2.56	24.85	1.686	.047	.026
Second spraying—					
Lime and sulphur, 43 gallons at $0.16	6.88				
Lead arsenate, 102 pounds at $0.08	8.16	15.04	1.020	.029	.016
Third spraying—					
Lime and sulphur, 32 gallons at $0.16	5.12				
Lead arsenate, 77 pounds at $0.08	6.16	11.28	.765	.021	.012
Fourth spraying—					
Lime and sulphur, 15 gallons at $0.16	2.40				
Lead arsenate, 36 pounds at $0.08	2.88	5.28	.358	.010	.006
Barrels, 937 at $0.311	....	291.41	19.770	.553	.311
Seed for cover crop (3)	....	39.47	2.678	.075	.042
Total for season	$	$418.10	$28.364	$0.793	$0.446
SECOND YEAR					
Manure charge (30 per cent against 1912 apples)	....	18.46	1.252	.035	.009
Spray materials used:					
First spraying—					
Lime and sulphur, 80 gallons at $0.04	3.20				
Lime and sulphur, 75 gallons at $0.14	10.50	13.70	.929	.026	.006
Second spraying—					
Lime and sulphur, 44 gallons at $0.14	6.16				
Lead arsenate, 105 pounds at $0.08	8.40	14.56	.988	.028	.007
Third spraying—					
Lime and sulphur, 52.5 gallons at $0.14	7.35				
Lead arsenate, 126 pounds at $0.08	10.08	17.43	1.182	.033	.008
Fourth spraying—					
Lime and sulphur, 35 gallons at $0.14	4.90				
Lead arsenate, 146.75 pounds at $0.08	11.74	16.64	1.129	.031	.008
Barrels, 2,104 at $0.421	....	885.78	60.094	1.681	.421
Total for season	.....	$966.57	$65.574	$1.834	$0.459

---

(1) Undiluted homemade solution: 36 pounds of lime, 80 pounds of sulphur and 50 gallons of water. The cost of labor is included. Rate of dilution, one gallon of lime and sulphur solution to seven gallons of water.

(2) Undiluted commercial lime and sulphur: Rate of dilution, one gallon of lime and sulphur solution to ten gallons of water.

(3) Items of seed cost: Clover, 180 pounds at 16 cents; oats, 22 bushels at 40 cents; turnips, 7.5 pounds at 25 cents.

Other Sources of Farm Income

The cost of growing apples is lessened by growing them in connection with other farm crops and utilizing the man and horse labor on these other crops when they are not needed in the orchard. The experiences of the best apple growers in old apple-producing regions indicate that proper management of a well-diversified farm is as important a factor in profitable apple raising as the use of different cultural methods, reduction of packing cost, or even cheaper wages for help.

The farm in question consists of 122 acres. Fifty per cent of this area is devoted to general crops other than fruit, and of the 39 acres devoted to fruit only about 15 are used for apple raising. Enough hay, oats and corn are raised on the farm for feed. Potatoes are raised, but only for home use. Wheat and beans, as well as the fruit, are cash crops. Each year 20 or 30 sheep are kept and pastured during the summer. Lambs are raised and fattened during the early spring months. Six horses are kept for work and one for family use. One or two colts are raised each year.

The actual costs given are not the most important result of this study, as other farms in the same community might show quite different results. The method of analyzing the various cost factors is the feature that is of most practical value. The department's new publication aims to outline for the independent apple grower a method that will enable him to determine the actual cost of maintaining and operating his fruit enterprise on his own farm. It does not attempt to give a concrete example of just what the costs will be. Beside the fact of the depreciation of the apple orchard already mentioned, other factors, such as the variety, age and size trees, the soils and the climate will influence the actual costs, but not the method of analyzing these costs. Apple growers will find much to interest them in the new publication which is being sent free of charge to such persons as apply for it.

The General says:-

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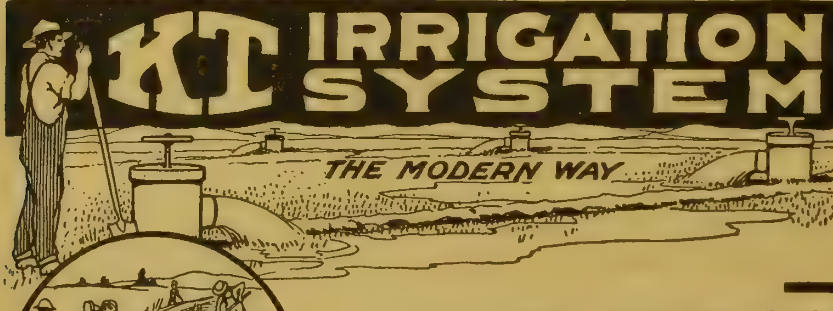

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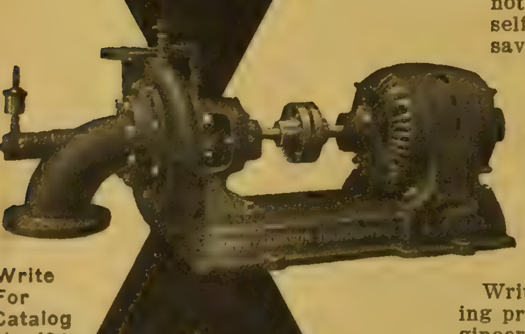

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DRAINAGE AND ALKALI RECLAMATION

(Continued from page 515)

a new drainage system on the west and north, which was installed in that year on the farms of J. and Fred W. Hansen. This new system will be considered later.

Fresno Drainage Survey of 1902.

In 1902 a general drainage survey was made in the vicinity of Fresno by Prof. O. V. P. Stout, under the general direction of Mr. Elwood Mead, then chief of irrigation investigations in the department of agriculture, in order to understand the engineering problems involved in the proper drainage of this region, the necessity of drainage being so evident that it was assumed. As a result of this survey two general plans for the relief of about 18,000 acres south and west of Fresno were prepared by Mr. C. G. Elliott, then chief of drainage investigations. One plan involved eight parallel open drains one-half mile apart extending from the eastern boundary of the district west to an intercepting drain leading to Fresno slough, 20 miles distant. The second plan considered dividing the proposed drainage district into 18 sub-districts, averaging in size from 800 to 1700 acres. Parallel lines of tile from 8 to 22 inches in diameter were to take the place of the open drains in the first plan. Instead of being carried 20 miles in a drainage channel leading to Fresno slough, the drainage water was to be pumped from collecting sumps to the various irrigation canals. The estimated acre-cost of the tile system was $13 to $14, with that of the open system possibly a little larger. No action was taken by the Fresno farmers as a result of his survey and report.

Experiments on the Dore and Baker Tracts.

In 1906 additional work was undertaken by the irrigation investigations and the state engineering department of California in the Fresno lands needing drainage, the purpose this time being to show experimentally the benefits of drainage. Two tracts were selected for experiments, one of 20 acres at North and Elm avenues, known as the Baker Tract, and one of 40 acres on the farm of Mr. John S. Dore, three and one-half miles west and one-half mile south of the Baker tract. The Baker tract is underlain unevenly with hardpan, and the accumulation of alkali was thought to be as heavy as on any other tract in the affected district. About one-half of the tract had never produced crops of any kind and practically no profits had been obtained from the rest for several years. The Dore tract, on the other hand, was a finely kept vineyard that had been very profitable, but that had begun to fail rapidly, about one-fourth of the vines being already dead.

The plans of the experiments on the Baker and Dore tracts and the immediate results obtained are fully discussed in Bulletin 217 of the office of experiment stations of the department of agriculture. Both experiments involved the laying of main and lateral tile lines, ranging from eight inches down to four inches in diameter, and leading to sumps from which the drainage water could be lifted by electric pumping plants and carried to near-by irrigation canals. The least depth at which the tile was laid was 3.5 feet, the average depth being 4.5 feet and the outlets into the sumps being six or seven feet below the surface. The local difficulties encountered are fully detailed in the bulletin mentioned, including the necessity for blasting the hardpan on part of the Baker tract at a cost of about $10 to about $14 per acre. After the tile and pumping systems had been completed both tracts were flooded to a depth of about 12 or more inches. The Baker tract was flooded intermittently through the spring of 1907. On the Dore tract flooding occurred for 10 days, the first spring, and from the following fall to the first week in March, 1908.

Following the flooding and the operation of the pumping plant on this tract a marked improvement was apparent in the color and tilth of the soil. Two small tracts were planted to Muscat vines, practically all of which lived and made a healthy growth throughout the first summer. The remainder of the tract was seeded about June 1, four acres planted to sorghum growing spotted patches of fodder eight or nine feet high and yielding 1.5 tons per acre, the spotting being due to the presence of hardpan on the one hand and to the breaking up of some of this hardpan by blasting on the other. This tract has not been flooded since the time of the experiment in 1907 and 1908 and the pump has not been operated by the owner of the tract since 1909. Neither has the owner made any effort to cultivate or crop it since then, with the exception of seeding a small portion to barley the first season after the experiment was concluded. At present the tract is abandoned to Bermuda and salt grass pasture and to the casual observer indicates a total failure of the experiment. But an examination of the tract, interviews with those who are familiar with it, and interviews with the owner suggest the very evident conclusion that in spite of the exceedingly poor soil involved, largely due to the unfavorable hardpan condition, the plan of drainage was entirely satisfactory and that if it had been persisted in by the owner, instead of encouraging a return to Bermuda pastue, a permanent improvement would have resulted over at least a portion of the 20 acres. Rather than demonstrating the failure of drainage in this section, it is believed that the experiment on the Baker tract shows, first, that there are difficulties connected with drainage of the very poor land, and second, that thorough and persistent farming is as necessary as a good tile system.

Dore Tract.

When the experiment was undertaken on this tract in 1907 it was estimated by the owner that at the rate the vines were then dying the entire 40 acres would become unproductive from the rise of ground water and alkali within a few years. Of 1000 young vines set out in April, 1908, after flooding and draining, 95 per cent made a very strong growth and lived. In addition old vines that had practically ceased to throw out shoots began to do so, although these nearly-dead vines ultimately succumbed. The old producing vines made a more healthy growth than for several years, remaining green throughout the summer instead of turning yellow with the first hot days of June, as before. According to Mr. Dore, an equally marked effect was then and has since been produced on the quantity and quality of the yield. The experiment was concluded by the irrigation investigations in 1909, but the tract has been revisited by the writer. The land has been neither flooded nor irrigated since 1908, and no new plantings of vines have been made later than one year following the period of the experiment. Some more of the old producing vines have died, several acres of the land thus bared being planted to pomegranates. Some of the pomegranates have also died, but these were located alike in the land most free from and most charged with alkali, and the owner attributes their failure to causes other than alkali which he cannot explain. But the young vines that have been planted and that have not been injured by other causes have apparently made a highly satisfactory growth and beyond any question whatever demonstrate the entire success of the experiment. Some of the old vines are still dropping out in patches, and it is evident, so far as conclusions are warranted from casual observations, that the land, which has had absolutely no surface water since the experiment was in progress in 1908, other than light precipitation, needs additional leachings. Owing to the continued low price of raisins, Mr Dore has not been encouraged to replant his vineyard where vines are missing, believing that possibly alfalfa will be more profitable, considering all circumstances. Consequently results are not available for young vines over the entire 40 acres. Not one acre of Mr. Dore's tract has, however, gone back to pasture, for with the exception of a brief period each season when the ground water is highest throughout the district, the drainage pump has held it down to a safe level, in spite of the high level of ground water in all of the surrounding territory.

Drainage on Hansen Farm.

During the progress of the drainage experiments on the Baker and Dore tracts, part of the work was done at wages by a comparatively young farmer of the neighborhood who had seen his father's 40 acres grow from a land of tar weeds to a $20,000 vineyard and then back again, after the rise of ground water and alkali, until for an entire year prior to 1907 it was carried on the market without a buyer for about one-fifth of the former estimated value. What this farmer got out of his connection with the Baker and Dore tracts was more than his wages and his contract price for pumping water during the construction period. He got a knowledge of how to drain and an appreciation of the results that could be made to follow. He already had 20 acres of his own and about $600 in cash, and with the assistance of the irrigation investigations in laying out his system, set about draining his own 20 acres, 80 acres on the home ranch and an additional 20 acres adjoining which he purchased. Joining his neighbor on the south, whose 40-acre tract was in the original Taft-Hansen experiment of the bureau of soils, he changed the original position of the Taft-Hansen pumping plant, advanced $300 to the local power company to get their power line made accessible, and zig-zagged a six-inch and eight-inch line of tile through the property from northeast to southwest to the collecting sump and pumps. One six-inch lateral was run north into a corner of the 60-acre home place, and an eight-inch lateral was run east to tap the land of his co-operating neighbor.

This home-made drainage system on the Hansen farm was laid in October and November, 1908. In 1909 10 acres were leveed, flooded and seeded. This was added to by eight acres in 1910 and by 19 acres in 1911, and the work of flooding an additional 40 acres will be started as soon as water is available for the purpose in the canals. The acre-cost of the drainage system was $12 on the F. W. Hansen 40 acres and $15 on the remaining 80. Nineteen of the 20 acres purchased on borrowed money in 1908 in 1912 yielded seven tons of alfalfa per acre, according to the figures of the owner, which sold for $10 per ton, or a total of five times the original cost of the drainage system for the same area. This land was seeded in 1909 and 1910. Another 19 acres seeded in the spring of 1912 and lying at the far diagonal corner of the tract, in the same season gave a measured yield of 90 tons of alfalfa, which if sold at the price brought by the alfalfa from the other 19 acres, viz., $10 per ton, would have paid the purchase price of the 20 acres of which the 19 acres is a part, plus the original cost of the tile drains. This land had been flooded and drained for three years prior to seeding. Of the 19 acres, eight acres has received its entire irrigation water — it was irrigated heavily four times in 1912 — from the drainage pump, sustaining so far as is possible with one season's work the conclusion of those who have from the first maintained, after numerous analyses of the drainage water, that the drainage water here is entirely satisfactory for irrigation. Starting in 1908 with 40 acres and a debt of $1800, this farmer, by applying knowledge he had gained through his connection with the Baker and Dore experiments, has in less than five years cleared his debt, built one barn and repaired another, and maintained a family of seven children from the profits of land that before drainage had an approximate value, as estimated by a conservative Fresno banker, of about $50 per acre. Of the land drained by the cooperating neighbor, 16 acres of alfalfa seeded in 1910 yielded an estimated 100 tons in 1911 and an estimated 112 tons in 1912. A near-by 20 acres, which is underlain with tile, but from which no water has been pumped for three years, is in salt and Bermuda grasses, yielding at the most seven or eight months of pasture at the rate of about two acres per cow.

The formation of one or more drainage districts about Fresno has frequently been suggested. In fact, our drainage district act was drafted with conditions here especially in view. It is believed that the time has never been more opportune for action and accomplishment than now.

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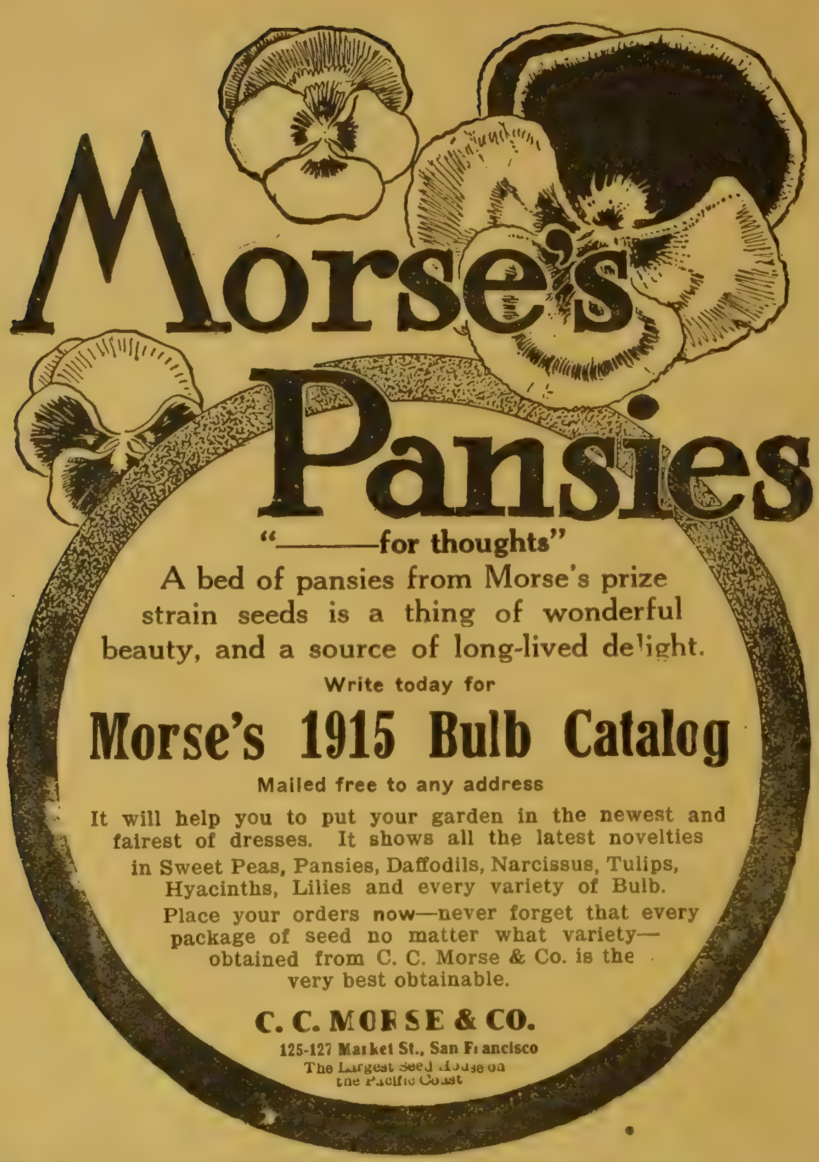
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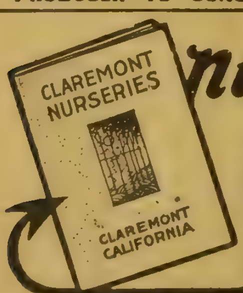

General Agriculture

CONCRETE SEPTIC TANKS

THE well-managed farm of today means many household conveniences as well as labor-saving farm machinery. Back-breaking drudgery has been largely eliminated from both house and fields. Running water and the kitchen sink and bathroom have supplanted the old-time pump and open, unsanitary drainage. But the most efficient disposal of sewage remained a problem until the concrete septic tank was invented. It is a simple, cheap and effective device, rapidly supplanting the drywell, with its constant menace of water pollution. In brief, there has come to the farmer his own little sewerage plant in concrete, which answers his purpose even better than large city works, for he has neither the tax nor repairs that always attach to a city sewer system.

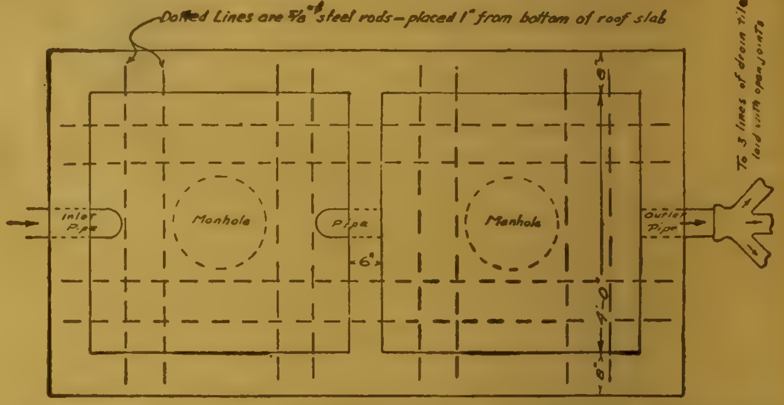
Dotted Lines are 5/8" steel rods—placed 1" from bottom of roof slab
Inlet Pipe
Manhole
Pipe
6"
Manhole
Outlet Pipe
8"
4'-0"
8"
To 3 lines of drain tile laid with open joints

FIG. 2. PLAN SHOWING PROPER POSITION OF REINFORCING RODS

The principle upon which the concrete septic tank operates is extremely interesting. It consists of a long, water-tight cistern through which sewage passes very slowly and evenly. Located underground, it is warm and dark, thus affording perfect conditions for the development of the bacteria or germs which clarify and render harmless the sewage. After passing through the septic tank, the sewage is practically free from all suspended matter and has the appearance of water. From the septic tank this clear effluent is discharged into three lines of ordinary farm drain tile.

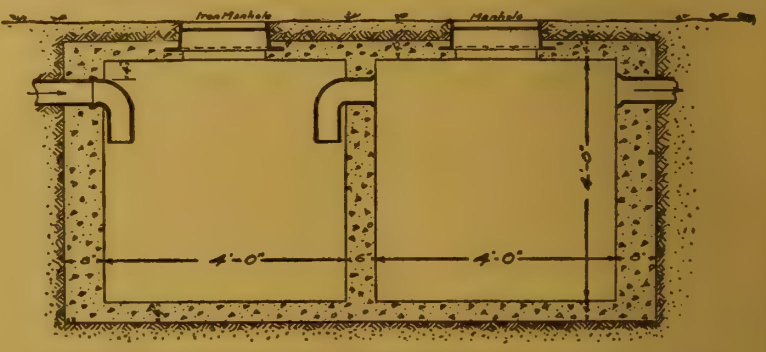

FIG. 1. CROSS SECTION INDICATING LOCATION OF PIPES

Size and Location of Tank

While the odor from a septic tank is scarcely noticeable, it is nevertheless best to locate it at some distance from the house. Choose a spot easy to excavate so that the top of the tank can be sunk six inches below ground level and where the lines of drain tile will have sufficient fall to carry off the discharge fluid. The tank should be large enough to hold the entire sewage for one day. For a family of eight to ten people occupying a house two bathrooms fitted with the customary appliances in the way of tubs and stationary washstands and downstairs the kitchen sink, a concrete tank having two compartments, each four feet long by four feet wide by four feet high, will be required. Since the top and bottom are each four inches thick and the top of the tank is six inches below ground level, dig the pit five feet two inches in depth. The walls of the tank are eight inches thick and the partition between the two compartments six inches. Therefore, the length of the pit should be nine feet ten inches and the width five feet four inches.

Making Forms and Placing Concrete

If the earthen walls of the pit stand firm only inside forms will be needed. These inside forms are merely boxes made of one-inch boards. Two boxes will be required to make two compartments. The outside dimensions of the boxes should be four feet square by four feet high. The boxes or forms will be placed on the freshly laid concrete floor. Holes for taking six-inch pipe should be made in the boxes as shown in Fig. 1. The holes should be four inches from the top of the box form, measuring from the top of the hole. The concrete should be mixed in the proportion of one part Portland cement, two parts sand and four parts crushed rock or gravel. Place a four-inch thickness of concrete in the bottom of the pit to form the floor of the tanks. On top of this concrete set the box forms, which should be ready for immediate use. Place the forms so that there is a space of six inches between them and an eight-inch space between them and the earthen walls of the pit. Then commence depositing the concrete for the walls and partition. As soon as the level of the concrete reaches the holes in the forms place in the holes six-inch pipes as illustrated. Then continue the concreting until even with the top of the forms.

Reinforced Top and Manholes

Two ordinary iron manhole frames and covers may be obtained from a local dealer in building supplies. The manhole covers should fit tightly and should not be perforated. The manhole frames should be ten inches high so that when placed on top of the forms the upper edge will be even with ground level. If the manhole frame is of less height than this, it should rest on a circular piece of one-inch board which is nailed to the top of the form. Since the concrete roof is to be self-supporting, it will be necessary to reinforce it with a few lengths of three-eighths-inch round steel rods. There will be needed four pieces of three-eighths-inch rods nine feet six inches long, and eight pieces five feet long. The roof is now ready to be placed. Place the manhole frames in proper position on top of the forms and deposit the concrete to a depth of one inch and on the concrete lay the long and short bars as shown in Fig. 2. When the bars are placed, deposit the balance of the concrete so as to bring the roof to a total thickness of four inches. As it will be covered with earth it is not necessary to give this top surface a smooth finish, merely level the surface by striking off with a straight piece of board. The tank should now be allowed to rest undisturbed for at least two weeks. At the expiration of this time, saw away wooden top of the forms inside of the manhole frames. Then enter the tank and remove the wooden forms, passing the lumber out the manhole opening. While in the tank make certain that the pipes are all unobstructed and not even partially clogged with dirt or lumber. The inlet pipe is then connected to the pipe from the house and the outlet pipe joined to three lines of three-inch concrete drain tile. The drain tile will be laid about twelve inches below the surface of the ground and joints left open, that is to say, no mortar must be used in the joints. This permits the discharged fluids to be absorbed by the surrounding soil. The drain tile lines should be laid in the form of the letter "Y" and sufficiently extended to cover a large area of ground. Average conditions require that each arm be about 100 feet long. After this is done, cover the tank with earth to the level of the manhole covers. It is now ready for use.

It is sometimes the custom to plant a few shrubs around the manhole openings, thus effectually hiding all evidence of the tank.

Materials Necessary

A tank of the size specified will require about four cubic yards of crushed rock, two cubic yards of sand and seven barrels of Portland cement. There will also be needed 78 feet of three-eighth-inch round steel rods, which can be obtained from the local blacksmith or hardware dealer. The tank can be built without skilled labor. It requires but few tools and construction methods are so simple that one man can easily build it.

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CULTURE OF ASPARAGUS

Written for California Cultivator

By D. F. Reichard

ASPARAGUS is grown in California more than is generally known and is a very profitable crop. In the great central valleys it is grown for canning and shipping while fresh; in the Imperial it is grown mostly for shipping fresh, while near all the larger cities there are fields for local consumption. Although asparagus is maritime in origin and habit and supposed to grow only where the water level is not far from the surface, it is being grown with great success in the Imperial Valley with surface irrigation as its exclusive water supply.

The best soil for asparagus is deep, rich, sandy loam of a moist nature. The peat lands of Orange County or the reclaimed lands of the San Joaquin and Sacramento deltas are also ideal. For garden purposes heavier soils may be made suitable by free use of sand and manure well worked through it, but commercial planting should be made only on soil naturally adapted.

FROM A CALIFORNIA GARDEN AT THANKSGIVING

For large or commercial planting it is advisable to start from seed, while for garden purposes it is a saving of time and trouble to put in one or two year old sets. The seed should first be layered, that is started in a box filled with a layer of sand, then a layer of seed and so on, then wet down two or three times a day with warm water. After seven days the seed should be sprouting. The seed and sand together are sown into the seed beds which have already been made by thoroughly working up the soil. Make the rows three or four feet apart by raking out all lumps and clods, making a flat ditch about two inches deep and a foot wide. Cover the seed an inch with finely pulverized soil. The young plants should be up in a few days. The beds should be kept clean and moist. One pound of seed will sow about 250 feet in such a seed bed.

Another method is to sow the seed in drills in well prepared soil, having the rows far enough apart to cultivate to the best advantage. When the plants are up a few inches thin out to about two inches apart. One pound of seed will sow 400 to 500 feet of drill by this method.

The seed are sown from January to April and remain in the seed bed until the following winter when the roots are transplanted to the field. Well grown one-year-old plants do better in California than older ones for transplanting, although for garden culture older roots are used that picking may begin quicker. There should be no picking made until the plants are three years old.

When making large commercial plantings, the plants are given eight to ten feet between the rows and two feet apart in the row. In preparing the ground for the seedling, it should be plowed at least a foot deep and thoroughly harrowed, then the rows marked off. Throw two deep furrows away from each other, making a ditch about a foot deep; in the bottom of this run a narrow one-horse cultivator; on this freshly made bed set the young plants, covering them a couple of inches with dirt to hold them in place; if the soil is not naturally moist, the newly set plants should be irrigated to settle the soil around the roots. As the shoots begin to show gradually work the soil onto the plants until the field is level. This should cover the crown of the plants about six inches. After this first year furrows will be thrown together over the rows so as to make ridges about a foot deep over the crowns; this is what makes the fine, long, bleached asparagus shoots. The cutting is done by plunging a long gouge into the side of the ridge as the protrusion of a tip indicates the location of a shoot. Cut all the shoots clean at each cutting during the season which starts with the first warm weather in the spring until the first of June and sometimes a month later, always stopping in time to give the plants a chance to make foliage growth, that vitality may be gathered for the plants to make a good cut the following year.

When the foliage begins to die and turns brown it should be cut off and burned before the seed begin to drop, as the young seedlings will prove a great pest if allowed to get started in the field. As soon as the field is cleaned up it should be thoroughly cultivated and then covered with from five to ten tons of stable manure to an acre and left till early spring, when it should be well cultivated again and ridged up preparatory for the new harvest.

A sprinkling of salt over the field once a year is advisable if the soil does not already contain it.

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A Journal of Horticulture and Agriculture

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Thursday, Nov. 26, 1914

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We guarantee our subscribers against loss through dishonesty of any advertiser in the Cultivator. We do not attempt, however, to adjust trifling differences between subscribers and honest, responsible advertisers, nor will we pay the debts of honest bankrupts. Notice of complaint must be sent us within 30 days from date of the transaction, and the subscriber must have mentioned the Cultivator when writing the advertiser.

ORANGES BY WATER

Arrangements are being made for the shipment of oranges by the Panama canal to begin in January. Orange growers hope for an enlarged market because of this lower shipping rate, especially to all parts of eastern and southeastern United States. With refrigeration it is thought the long time shipments will not be a serious factor.

IMPORTED STOCK

The pure bred livestock people of the United States who have been so active for the past few years in introducing some of the best blood of European farms and stables certainly have a great responsibility and a great opportunity in the present moment. It is very probable that for some years to come draft horses and even dairy animals will be in such reduced numbers in Europe that their export will be impossible. If such is the case it is perhaps time for American breeders to establish the fact that some of the best blood of the world now exists in this country. Why may it not be developed and from it an American strain which will be the superior or at least the equal of any imported blood?

"Imported" has heretofore been a word to conjure with. Let us make "Made in America" of even greater worth in our livestock as well as in our manufacturing industry.

OLIVE—COTTON SEED OIL

In a recent issue of the Weekly News Letter sent out under authority of the secretary of agriculture is an article headed "Use of Cotton Seed Oil." Good advice, for it is a most healthful food and one the consumption of which is increasing with great rapidity. But in one particular we feel the writer is unjust and unfair to one of California's great products, olive oil. We perhaps cannot take exception when he says, "As a matter of fact it is fully as nutritive as olive oil and on account of its bland flavor is actually preferred by many. It lacks, of course, the distinctive olive flavor which many persons, especially the Italians, find desirable." But the whole trend of the article is to prejudice against the use of olive oil. It does not refer to the fact that olive oil is produced in the United States, but does make comparisons of wholesome cotton seed oil with imported Italian oil. This naturally prejudices the reader in favor of American produced goods. The department of agriculture is not a sectional institution, and to send forth articles which are prejudicial to one of the purest foods products produced in America, we repeat, is unjust and unfair to a great industry. There is produced in California annually from 150,000 to 280,000 gallons of oil. Compared with the cotton seed oil industry, this is infinitely small. However, it is a growing industry which has been fostered by this state and the department of agriculture and is worthy of better treatment than is accorded it by the News Letter.

PROSPERITY OF ALL

At the last State Fruit Growers' Convention one of the speakers was criticised because he presumed to speak upon a vital topic when he was not directly engaged in fruit growing. There are a vast number of people in California whose interest in the fruit growing industry is as vital as the interest of those who have their hands on the plow or direct harvesting in the orchards. It has been quite common to criticise the activities of these who are claimed to be indirectly interested, but we believe a great help to the fruit growing industry would be removed were the membership in the state organization or participation in the state meetings restricted to those who actually till the soil. Others whose prosperity comes from the prosperity of the farming interests sometimes have more time to devote to the detail of the work than those who must be constantly watching the planting and cultivation and havesting operations.

We believe these state conventions should bring the fruit growers together formally to discuss the larger interests of their calling and listen to addresses by scientific men who have been trained to make investigations and can tell what they know in a way which will be instructive to the practical horticulturist. Several times during every state convention which has been held in the memory of the writer has the question been brought up, "We want more practical addresses by the practical horticulturist," but unfortunately the practical horticulturist is not always the practical talker. If he were there would be greater value in local meetings than there is today. We think the practical lessons should be referred more to these small meetings and the larger scientific problems brought out in the state conventions where the best talent of the entire country should be secured, and the fact that the scientific man is not a practical horticulturist in no way lessens the value of the information he brings. By "practical horticulturist" we mean now the actual soil tiller. It goes without saying that the scientific investigator must not be impractical.

THREATENING QUARANTINE

The International Livestock Exposition management writes that this famous show which was to have been held in Chicago November 28 to December 5 has been called off. Mr. B. H. Heide states that the yards and the entire livestock interests of the Northwest are uniting with the department of agriculture in crushing out the disease. He says:

"It is with extreme regret that I have to announce that the International Livestock Exposition for 1914 has been declared off by reason of the appearance of the dreaded 'foot and mouth' disease in the East and this Middle Western country. The federal government has taken the most careful and energetic action to confine the disease in the region of its appearance, and it has been deemed unwise to bring together the enormous crowds that flock to the 'International.'"

For the first time in 50 years there is not a hoof in the yards.

The Pacific International Livestock Exposition which will be held in the Union Stockyards at Portland, Oregon. December 7-12 announces that it has restricted exhibits to fat cattle classes, that is breeders will not be admitted to the exposition.

There have been five other outbreaks of the foot and mouth disease in former years, but all combined these did not cover the territory which this one attack developed with such wonderful swiftness. But the vigor which is being shown in the enforcement of a strict quarantine will doubtless result in early control. Surely every stock breeder will unite with the government in enforcing the quarantine.

To give an idea of the rigid quarantine; every herd which has shown any infection has been entirely destroyed no matter what the value of the breeding animals in the herd may be. The department allows compensation for animals destroyed on a beef basis.

UNSIGHT UNSEEN

Commenting on the foolish man who buys lands in new states without first making thorough investigation, a correspondent of the Rural New Yorker refers to the fact that in his own state of New York there are lands which have made their owners wonderfully prosperous while adjoining farms are so extremely poor that they cannot even pay expenses of upkeep. An editorial touching upon the same point adds:

"No, the land here mentioned is not in Florida or California, but right here in New York state. The same story might truthfully be told of any county in the country. This man lays down a large, solid chunk of gospel truth about real estate when he says that a buyer should come and see the land before buying. We cannot think of a more foolish thing than locating a home for the family on some unknown and unseen spot in order to save the expense of fair investigation. We have been criticised for taking this position. 'Do not interfere with the sale of real estate,' these critics say. 'Get all the new settlers you can; it is not your business to frighten them away or care if they are not satisfied.' A very short-sighted policy that. New York does not want any dissatisfied immigrants. They simply become what are known as 'knockers,' and there are too many such now. We want to see the farms of New York occupied by contented and prosperous people. There are good opportunities here, but the man must fit the farm in order to make a true combination and so—north, south, east or west—our advice is to see the land and study it before buying."

If this advice applies to settlers in New York it applies with double force in California. We do not want to increase the crop of knockers made from dissatisfied land buyers. There will be many a heartache caused by some subdivision schemes now being worked in this state. We hope we may soon have a law which will save many of these purchasers, but until we do, and even after, we will say that the unsight unseen method of buying is inherently wrong, for good land for one man may not prove profitable in the hands of another.

Agricultural Notes

Cuban and Isle of Pines fruit growers filled with exhibits one whole floor of the building in which has been recently held the Boston Food Fair.

The governors of Oregon and Massachusetts have suspended the hunting season this year because of increased danger of forest fires when the woods were exceptionally dry.

The bureau of chemistry of the department of agriculture is urging that all grain dust explosions be reported to it as that bureau is now engaged in special investigations to prevent damage from this cause.

Government officials have estimated that the people of this country spend annually five hundred million dollars for drugs and medicines. One exchange is unkind enough to call this the result of drug intoxication.

The Florida citrus fruit crop for the season 1914-15 is estimated at 9,000,000 boxes, of which oranges will make 5,250,000 boxes and grapefruit 3,750,000 boxes. This is the estimate based on reports from growers, shippers and big distributing firms at various points in the state.

To control the flood waters of the lower Rio Grande and utilize for irrigation purposes is the purpose of present agitation among American land owners of that section. It is hoped that joint federal control by Mexican and United States governments can be secured.

Agents of the Grand Trunk Pacific Railway are taking measures to get Belgian settlers for the territory opened by the company's lines in western Canada. It is expected that the European war will result in a rush of settlers to Canada. Belgian farmers are very thrifty people. It is hoped to settle a large tract in the Stuart river district.

Railroads leading from Richmond and Norfolk, Virginia, into North Corolina have reduced their interstate rates on potatoes and other vegetables. This reduction was made at the combined request of the Chambers of Commerce of Richmond, Norfolk and Petersburg. The former rates are restored. Two months ago the roads increased the rate by nearly 50 per cent.

Shipments of rare unnamed roses and other plants have been made from Luxemburg, France and Great Britain to be entered for the $1000 prize offered by the Panama-Pacific International Exposition for the most perfect new variety of rose. Those in charge of the two expositions say that while there is now no doubt that many European nations will be represented it is apparent that in addition there will be an unprecedented representation from South America and the Orient, as well as from Central America.

Agricultural News Notes of the Pacific Coast

Northern California

Better prices are being received for onions than for some time.

Petaluma's big poultry show opened November 19, closing on the 22nd.

Yolo County dairymen have formed an association, electing A. W. Morris president.

The Sonoma County Kennel Club held a dog show at Santa Rosa November 20-21.

The proposition to move the county seat of Butte County from Oroville to Chico failed to pass.

Tillie Alcartra, a Woodland dairy cow, has broken the world's record held by Creamelle Vale.

A group of farmers at Byron in Contra Costa County are planning an experiment with Kentucky hemp.

Meetings are being conducted in Mendocino County to arouse sentiment for appointment of a county farm adviser.

Olive prices in the district near Corning, Tehama County, range about $175 a ton. Two hundred dollars is being paid for Queens.

The rice harvest of Gridley, Butte County, shows grain of better quality than ever before. The cool fall ripened the grains slowly, filling the heads well.

Rice growers of Butte County are very much encouraged at the heavy yields shown by the harvest. A new rice mill is to be erected at Gridley with a capacity of 200 tons daily.

From present indications 10,000 acres in Yuba County will be sown to rice the coming year. The tule lands along the Yuba and Feather rivers have been found particularly adapted to its culture.

The 23 boy farmers who were given a continental trip as a reward for winning crop growing contests in high school classes have finished their trip. They visited Washington and New York on their tour.

Shasta County is in the middle of her olive harvest. Picking of Manzanillos is practically completed and just beginning on Missions. It is estimated that the crop will be 40 per cent larger than last year.

At the recent meeting of the Humboldt County Dairymen's Association several new members were added. The next meeting will be held in December at Loleta, at the same time as the meeting of the Loleta farm center.

Placer County is awaking to the benefits derived from a county farm adviser and to that end held a meeting recently and formed a farm bureau. Units of the bureau are to be formed at Mount Vernon, Gold Hill, Roseville, Long Valley, Loomis, Penryn, Sheridan, Lincoln, Edgewood, Applegate, Colfax, Dutch Flat, Bowman and Lone Star.

Directors of the farm bureau units of Solano County have perfected a permanent organization, electing H. C. Blake of Vacaville, president James Corcoran of Vallejo, vice-president; Henry Bird of Suisun, secretary-treasurer. All requirements have now been completed and Solano County is awaiting the appointment of a county farm adviser by the state university.

Central California

Kings County dairymen paid out in cream checks $160,000 for October cream.

Californians are urged to plant seeds of the native poppy now before the winter rains set in.

A squash eight feet long and weighing 131½ pounds was grown by a rancher near Merced.

A pigeon farm containing more than 1000 pairs of birds is being established at Hollister in San Benito County.

The Tulare Cooperative Poultry Association reports transaction of business totaling $4000 for the month of October.

The Oakdale irrigation district of Stanislaus County will try the plan this year of keeping water in the ditches all winter.

The first carload of oranges sent from Porterville under certificate of standard of maturity established by the federal government left that city November 13.

Farmers' institutes were held at Merced November 19, Atwater, the 20th and Livingston the 21st. The hog industry was one of the principal topics discussed.

A carload of sugar cane has arrived in Tulare County. It will be planted as an experiment to determine whether or not it can be successfully grown in that section.

R. M. Roberts, agricultural demonstrator for the Sante Fe, says that rice growing in Fresno, Tulare, Kern and Kings Counties is no longer an experiment but will be profitable.

The Tulare County Protective Association of Porterville has stationed ispectors in the field to guard against the shipping of any fruit which is not in first-class eating condition.

At the next meeting of the Turlock center of the Stanislaus County farm bureau, which will be held December 1, poultry raising will be the subject of discussion. O. H. Roberts is president of the local organization.

One of the most up-to-date packing houses in Central California has just been completed at Lemon Cove by J. E. Pogue, a large grower of oranges, lemons and grapefruit. The packing of navels will begin in a short time.

The newly formed Terra Bella Growers' Association made its first shipment of 50,000 cans of tomatoes to San Francisco last week. The cannery featured an extra fancy pack for which there is considerable demand.

County Horticultural Commissioner Sharp of Hanford, Kings County, is warning vineyardists that they must fight the grapeleaf roller which has recently put in an appearance. He recommends putting sheep into vineyards to eat off foliage and so destroy the pest.

Federal agents will keep close watch of orange shipments this season, and it is thought the government will be particularly severe on all those who attempt to ship out fruit before it meets with tests which chemists have laid down as to maturity.

Southern California

Ontario is holding a pigeon and poultry show this week.

Fallbrook, San Diego County, reports an immense olive crop this year.

Many walnuts have this year been shipped in four-pound sacks, 25 to the "bale."

The Hemet Cured Fruit Association will market its fruit through the state exchange.

Shipping reports show that cotton exports are increasing rapidly, especially to England.

In Los Angeles, November 27 has been named as a special day for everyone to plant gardens for 1915.

The apple harvest of Beaumont, Riverside County, is finished. Eighteen hundred acres will be planted to apples this year.

The walnut crop of the Hemet Valley has been sold to the California Walnut Growers' Association and has netted the growers $12,000.

At the recent meeting of the California Walnut Growers' Association in Los Angeles plans for an extensive advertising campaign were discussed.

It is said the greatest variety of citrus trees to be found anywhere in the world are now growing at the citrus experiment station at Riverside.

The Lima Bean Association has sent a letter to each of its members urging that each one contribute a bag of beans for food for the starving Belgians.

More than $500,000 is realized annually by California vegetable growers for winter vegetables shipped throughout the United States and Canada.

Levee directors have asked for bids for Colorado river control work as the first step in a plan to "straight jacket" the Colorado from the intake to Cibola Valley.

At its recent annual meeting the Anaheim Citrus Fruit Association received a report showing that the association had shipped a total of 318 cars of fruit this season, against 215 last year.

Manager Johnson of the Holly Sugar Company at Huntington Beach announces that his company has enough beet seed in its warehouses today to supply the demand for the 1915 crop.

Experts of the federal forest service and the bureau of soils are surveying the Santa Ana watershed. If the land is considered better for agricultural purposes than for timber it will be thrown open to entry.

The fruit growers of Southern California are expectantly awaiting results of the new process invented by Charles E. Burke, of the University of California's department of chemistry for preserving orange, lemon and lime juice.

Shipments of walnuts from the Los Nietos walnut house will total for the season something over 90 cars. About 65 per cent of the Los Nietos shipments went by way of the Panama canal, the rate being 64 cents per hundred against $1.40 by rail.

The Coast

An ostrich farm is to be established at Chandler, Arizona.

Dairymen of Polk County, Oregon, have organized an association.

The Farmers' Union of Chandler, Arizona, will meet Saturday, November 28.

Washington's Holstein Friesian Association held its annual meeting in North Yakima last week.

Citizens of Murray, Utah, are launching a movement to build a sugar factory in Salt Lake County.

The annual meeting of the Oregon State Horticultural Society will be held at Medford, December 24.

A shipment of Chinese eggs is reported on its way to the Seattle market to sell wholesale at 22 cents a dozen.

The Arizona Egyptian Cotton Company had a unique exhibit at the state fair. It was a cabin constructed of cotton bales.

Five thousand pounds of cottonseed meal was recently sent by parcel post from an Arizona concern to another part of the state.

More than $1,000,000 was paid out in checks last week for sugar beets and salaries of employes by two beet sugar factories near Ogden, Utah.

Three million eggs from the West left New York for England early in November, England's supply from Russia being cut off on account of the war.

The grain crops of Baker County, Oregon, are all threshed and the yield is said to be 50 per cent better than that of last year, with good prices prevailing.

No breeding stock will be shown at the Pacific International Live Stock Exposition to be held in Portland, Oregon, December 7-12. This is because of the outbreak of foot and mouth disease in several states.

The North Pacific Fruit Distributors announce that there is now a better demand for good keeping apples suitable for storage. This demand is coming from all over the United States, from points in Arizona to New York.

At the recent meeting of the National Woolgrowers' Association in Salt Lake, F. J. Hagenbrath was elected president and S. W. McClure secretary, both of Salt Lake. Salt Lake was made the permanent headquarters of the association.

The North Pacific Fruit Distributors report that apples are going regularly to England, Scotland, Ireland, Denmark, Sweden and Norway, where the markets are little affected by the war. The Russian market which formerly was supplied through Hamburg will of necessity be neglected.

Cash advances of approximately $100,000 have been made already this season to Washington fruit growers of the Spokane district, who sell through the Spokane Fruit Growers' Company. This consists of advances for spraying materials, boxes and other supplies, expenses of packing and shipping and in straight loans to the growers on their fruit.

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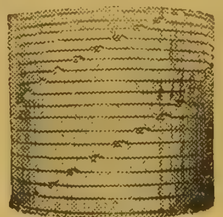

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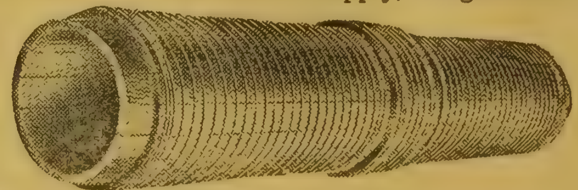

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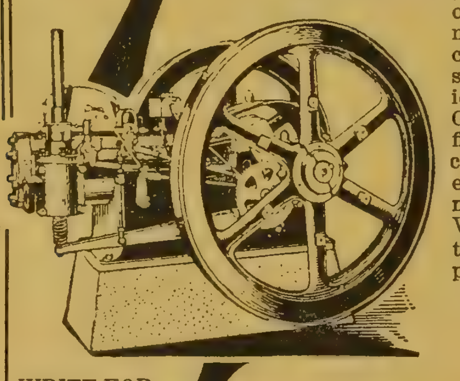

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Live Stock and Dairy

MAKING CREAMERY BUTTER ON A SMALL RANCH

Written for California Cultivator

By Leroy Anderson

A SUBSCRIBER requests information on the subject of making butter on a 40-acre farm near Los Angeles together with some suggestions as to cost of equipping the farm for dairying. The figures given in response to this request are based on the experience of others—in short I have gleaned some things from "What the other fellow is doing."

The Land

An average cost of fitting land for alfalfa, land that is fairly level to begin with, including leveling, grading, making ditches and checking is about $25 per acre. The cost of a pumping plant to supply 40 acres where the well is about 100 feet deep and the lift about 20 feet is about $1000. If the irrigating well can be located near the building site it may also do for domestic water supply, in which case a tank only would be needed in addition to one well. On a 40-acre farm then the approximate cost of establishing it in alfalfa would be: Leveling, grading, checking, etc., $1000; pumping plant installed, $1000; seed and seeding, $200; total $2200.

Buildings

For a barn I would suggest the one shown in Fig. 1 in the Cultivator of May 14, 1914. This will accommodate 32 cows and four horses. If desired two of the horse stalls may be changed into a bull stall which will obviate the necessity of building an extra bull shed. The cost of this barn is $750, exclusive of the calf shed shown on one side.

The milk house should have at least three rooms—one for separating, one for cream ripening and churning and a third for the engine and boiler. It it probable that a coldroom or ice chest will be needed for the warmer weather since the dairy is too small to afford an ammonia refrigerating plant. In this case a square building 18 to 20 feet on each side and divided into four equal parts, would be the most economical shape to build. There would then be one corner for engine and boiler, one for separator and wash room, one for ripening and churning and the fourth divided into two parts, one for ice-room and one for storage. If this building could be constructed of concrete all the better, especially to save ice in warm weather. Thus built it would probably cost between $400 and $500.

The cost of the necessary dairy building is then: Barn, 56x64 feet,, $750; milk and butter house, $450; Tank house, tank and piping. $300; total $1500.

Livestock—

30 grade cows @ $100	$3000
1 registered bull	250
2 work horses	400
Hogs, 3 sows and 1 boar	100
Total	$3750

Farm Machinery—

1 mower and 1 rake	$100
1 wagon (heavy) and rack	125
1 spring wagon	65
1 set work harness	35
1 12-in. plow	15
2 harrows	50
Small tools	50
Miscellaneous	60
Total	$500

Dairy and Butter-Making Equipment—

1 2-H. P. gasoline or distillate engine	$115
1 2-H. P. vertical boiler	70
1 separator, capacity 1000 lbs. per hour with power attachment	120
1 cream cooler on stand	10
1 50-gallon steam or water jacketed cream vat	35
1 combination churn and butter worker	80
1 galvanized iron wash sink	15
1 baby butter mold and cutter with one extra mold	17
Buckets, can, etc.	38
Shafting, pulleys and installing	50
Total	$550

Summary of Equipment—

Fitting land and seeding	$ 2200
Necessary dairy buildings	1500
Livestock	3750
Farm machinery	500
Dairy equipment	550
Total	$8500

Butter Markets

At present the great majority of California markets are supplied with creamery butter, the amount of ranch and dairy butter made being comparatively small. However, there is some of the latter even in highly specialized creamery localities. I was surprised recently to find in Modesto, ranch butter on sale in the groceries. I do not know where it was made, but it was sold at considerable discount under creamery butter. During the past eight months I have been eating "ranch" butter made by a neighbor and have found it to be of better quality than any creamery butter that we have been able to buy in Santa Clara Valley, some of which came from the interior valley creameries. This ranch butter has cost less than creamery to make.

Butter made well with the equipment listed above should sell as creamery butter because a full creamery outfit is used and likewise creamery methods. It is "ranch" butter when the milk stands in shallow pans from 24 to 36 hours and when skimmed the milk is often sour. Then the cream stands around until a convenient time for churning. (But the ranch butter I have been eating could not have been made that way—it is too good). If creamery butter, it should sell on that basis and thus command the highest prices. In order to make the best profit on such home-made goods in small quantities a special trade must be built up and that, as nearly to the consumer as possible. The wholesaler won't do, because he is two doors from the consumer. Possibly the consumer himself won't do, because it is too expensive to deliver in small lots. Small first-class hotels might like so good a product at remunerative prices. Most of the output could then be delivered at two or three places. Possibly, at the beginning, the best market would be found at one of the smaller groceries which is anxious to build up a fancy trade. At any rate personal investigation would be necessary in finding a market. While re-

Improve the Cows You Have!

Hundreds of "backward" cows that are sold for meat ought to be kept in the herd. Most of the poor milkers are non-productive because their system is run down. They need medicine that will tone up the sluggish organs of digestion and enable them to thrive and perform their natural functions of production and reproduction.

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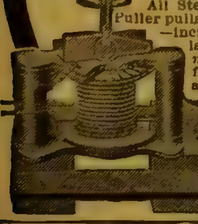

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When writing advertisers, mention the Cultivator.

tailers as a whole are supplied by commission men or wholesalers, I believe that a strictly fancy butter, fresh from the churn, would find a good market. One instance comes to mind of a ranch near Redlands that for 25 years has sold its butter to one dealer at five cents per pound above Los Angeles quotations for creamery extras. This butter is made on the ranch from a herd of 100 cows. The butter costs five cents a pound to make, but at that the rancher is ahead of the creamery selling in the open market, because it costs the creameryman two to three cents per pound for making.

Making Butter

I have suggested a power outfit because a herd of 30 cows will warrant it. The two-horsepower gasoline engine is large enough to run the separator and churn, and as distillate can be used for fuel it is cheaply operated. Engine distillate costs six to eight cents a gallon and at that price electric current must be purchased at two and one-half cents per kilowatt hour to compete with the gas engine. Of course an electric motor is easier to operate and requires less floor space.

As to a boiler, the one and one-half horsepower size is about the smallest made and I have listed one of two-horsepower. This furnishes ample steam for cleaning and sterilizing. It can be fitted to burn stove distillate, which is cheaper yet than engine distillate.

Separating and Ripening

Immediately after each milking run the milk through the separator. Let the cream pass from the cream spout directly over the cream cooler into the ripening vat or into a can. The cream then will be cooled to within a few degrees of the temperature of the water inside. In cool weather it will be necessary only to keep the cream in the ripening vat. At night it will cool more evenly than when it comes from the water cooler and by keeping the room closed by day the cream temperature will not rise. In fact in winter it is probable that part of the cream at least need not be run over the cooler. To ripen properly the temperature of the cream should be from 60 degrees to 65 degrees for 12 hours before churning, i. e., if it has been cooler than 60 degrees during the remainder of the time.

To be more concrete, suppose we were churning once in two days, and the next churning day is to be Thursday. Tuesday's morning and evening cream will be run over the cooler into the vat. Wednesday morning, if the cream temperature is below 60 degrees, we will not cool from the separator. That evening, if the cream is not over 60 degrees and is not perceptibly acid we will not cool from the separator. Then next morning the cream should be about right as to acid and temperature for churning. Before separating Thursday morning we put the cream into the churn and have the vat ready for separating. If, on the other hand, the cream in the vat Wednesday morning is above 60 degrees and beginning to ripen, we will cool that morning's cream and we would probably need to cool the evening cream in order to retard the ripening process and not allow the cream to become too sour. These suggestions apply in winter or other cool weather, and probably at such times it will not be necessary to churn oftener than once in three days.

In warm weather the problem is to

"Not the *Cure* But the *Prevention* of Hog Diseases Is Your Big Problem."

Swine epidemics are constantly playing havoc in different parts of the country. Be on your guard.

My message to you is *Prevention*, and almost the whole secret of prevention lies in proper feeding and sanitation. Keep your stock toned up and free from worms—keep the animals, pens, troughs and runs clean and disinfected and you'll have very little trouble raising healthy, weighty stock.

DR. HESS STOCK TONIC
Makes Stock Healthy and Expels Worms

Dr. Hess Dip and Disinfectant
Destroys Germs—Deodorizes—Cures Skin Diseases

These two preparations are the result of my lifetime experience as a doctor of veterinary science, a doctor of medicine and successful stock raiser. Dr. Hess Stock Tonic will put your animals in a thriving condition, make the ailing ones healthy and expel the worms. Contains *tonics* to aid digestion and appetite; *blood builders* to enrich and tone up the blood; *laxatives* for regulating the bowels and *vermifuges* to expel worms.

Sanitation has been my constant message to you for many, many years, through the agricultural press, as being an absolute necessity for the prevention of disease.

Dr. Hess Dip and Disinfectant destroys disease germs, foul odors, and is an effective remedy for parasitic skin diseases. For cleansing hog-pens, stables, barns, outhouses, sinks, drains, troughs, garbage cans, etc. Put it in the hog wallows, sprinkle it around the poultry houses—use it wherever there are foul odors, filth, lice, scab, sheep ticks, mange, etc. It is non-poisonous and non-irritating; always uniform in strength and one gallon makes 75 to 100 gallons of solution.

☛ **So sure am I that Dr. Hess Stock Tonic will put your animals in a thriving condition, make the ailing ones healthy, and expel the worms—that Dr. Hess Dip and Disinfectant will destroy foul odors and disease germs, prevent and cure skin ailments and keep your premises clean and sweet smelling—that I have authorized my dealer in your town to supply you with enough for your stock, and if these preparations do not do as I claim, return the empty packages and my dealer will refund your money.** ☚

The above dependable and scientific preparations are never peddled—sold only by reputable dealers whom you know. I save you peddler's wagon, team and travelling expenses, as these prices prove: Dr. Hess Stock Tonic, West of Rockies, 25-lb. pail, $2.25; 100-lb. sack, $7.00. Smaller packages in proportion. Dr. Hess Dip and Disinfectant is sold in pint bottles, quart and gallon cans, also in barrels.

GILBERT HESS
Doctor of Veterinary Science
Doctor of Medicine

Dr. Hess Poultry Pan-a-ce-a

A splendid poultry tonic that shortens the moulting period. It gives the moulting hen vitality to force out the old quills, grow new feathers and get back on the job laying eggs all winter. It tones up the dormant egg organs and makes hens lay. Also helps chicks grow. Economical to use—a penny's worth is enough for 30 fowl per day. West of Rockies: 1½ lbs. 25c; 3 lbs. 50c; 7 lbs. $1.00; 25-lb. pail $3.00. Guaranteed.

Dr. Hess Instant Louse Killer

Kills lice on poultry and all farm stock. Dust the hens and chicks with it, sprinkle it on the roosts, in the cracks and dust bath. Also destroys bugs on cucumber, squash and melon vines, cabbage worms, etc., slugs on rose bushes, etc. Comes in handy sifting-top cans. West of Rockies: 1 lb. 25c; 3 lbs. 60c. I guarantee it.

I have a book about Dr. Hess Stock Tonic and Dr. Hess Dip and Disinfectant that you may have for the asking.

DR. HESS & CLARK, Ashland, Ohio

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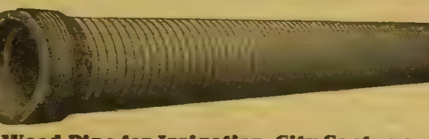

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MANY of the HOLSTEINS that I SOLD in my June Sale have been RESOLD AT DOUBLE THE PRICES I SOLD THEM FOR.

YOU START AT THE TOP WHEN YOU BUY THIS KIND

The Holsteins in This Sale have been sired by 28 different Sires, Each One a GOOD ONE. There are Grandsons and Granddaughters of KING SEGIS—HENGERVELD DE KOL—SARCASTIC LAD—DE KOL 2D BUTTER BOY 3D—CONTEST COLANTHA CHAMPION—PONTIAC HENGERVELD PARTHENEA—JOHANNA COLANTHA LAD—DUCHESS ORMSBY PIEBE BURKE—JESSIE MAIDA PAUL DE KOL BURKE and many other sires famous in Holstein History. Families that have been bred for generations for GREAT MILK AND BUTTER PRODUCTION. Get some of this GOOD BLOOD and make your herd famous.

WRITE AT ONCE FOR SALE CATALOGUE.

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keep the cream cool enough so it will not ripen too fast. Then ice will be essential. Run the cream over the cooler into a can and place the can in the icebox. Leave it there until next separating time, when it is placed into the cream vat. Operating in this way the cream may be held two days before churning even in quite warm weather. While in the vat the cream may be kept cool by running water through the water jacket.

By ripening is meant the development of lactic acid in the cream, this acid being formed by the action of bacteria upon the sugar in milk. The lactic acid bacteria do not work below 50 degrees. They grow slowly between 50 degrees and 60 degrees, more rapidly between 60 degrees and 70 degrees and above 70 they multiply fast. These points help the buttermaker in controlling the rapidity of ripening. Well ripened cream has a smooth glossy appearance and is slightly acid to the taste. Frequent stirrings aid in the evenness of ripening.

The small combined churn and worker, suggested in my list, simplifies both these operations. If the cream is of the proper temperature the churning should require from 20 to 30 minutes. If more than 30 minutes is needed, the chances are that the cream is too cold, if less than 20 it is too warm. When too warm the butter comes soft and is not of good grain when finished. If too cold the butter is so hard as to be difficult to "gather" and thus time is lost.

Washing, Salting, Working

Stop churning when the butter granules are about the size of wheat grains. Then draw off the buttermilk through a seive to catch any butter particles. Add to the butter as much water as there was buttermilk, and at the same temperature. Then revolve the churn slowly eight to twelve times and drain off the water. To remove all the buttermilk wash the butter a second time, somewhat less than the first time and cooler if the butter seems too soft, warmer if too hard. Agitate the churn only slightly this time and let stand ten minutes or so if it is desired to change the temperature of the butter, then drain off well.

Scatter over the butter in the churn an ounce of salt for each pound of butter. Revolve the churn a few times and then let stand for the salt to dissolve, which may be about 15 minutes, then revolve again until the salt is well mixed in, being careful not to work until the butter becomes salvy. The butter when finished should break with a granular texture, something like a broken piece of steel. After working, pack into the mold and set away to cool and harden before cutting and wrapping.

Butter thus made on the ranch, where the milk is separated directly from the cows, should be the best ever and command the very highest price. There are many mouths in the cities asking for just such butter.

It is impossible to induce the cow to give returns before she provides for her own wants. She will use all the food she needs before she will begin to pay for what she gets. What the man who gives his cow a short ration saves in feed represents the feed that would be used by the good cow in making returns.

The silo insures the continuance of pasture conditions and profitable dairying throughout the winter.

NO BREEDING CLASSES AT PACIFIC INTERNATIONAL EXPOSITION

The Pacific International Livestock Exposition, to be held at Union stockyards, North Portland, Oregon, will show only fat stock. Manager O. M. Plummer writes:

"As the result of a conference between federal officials of the bureau of animal industry and prominent breeders and offcers of the livestock exposition, it was decided to call off that part of our show given over to the breeding classes in cattle, hogs and sheep, giving this year a strictly fat stock show, covering livestock intended for slaughter.

"It was the consensus of opinion that there was a minimum only of danger in connection with the foot and mouth disease, but with such an investment as would be represented by the many herds of pure-bred livestock from all over the western part of the United States which had already been entered, it would be unwise to continue the breed end of the show. This will in no wise affect the classes in the fat stock division given over to fat cattle, hogs and sheep.

"The managers of the auction sale of Shorthorns, Herefords, Holsteins and of hogs, also state that their sales will be carried on as advertised, as their offerings are all owned in local territory.

"The student judging contest in which at least six of the agricultural colleges of the Pacific slope are entered will be held as usual.

"Indications at the present time point to the largest showing of fat stock ever held on the west coast, and parties of livestock men and others interested in the industry are being made up at all the larger cities and towns in contemplation of spending the week of December 7-12 at the Live Stock Show in Portland."

A great deal of the sow's future usefulness depends upon how she is cared for and fed until bred for her first litter.

Don't Be Tied To A Cow's Tail—

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Veterinary Queries

Answers in this column by Dr. Wm. Petrie, 2714 South Harvard Blvd., Los Angeles, are without charge. For immediate mail answer remit $1.00. In writing questions give full symptoms or particulars of injury of animal.

Catarrh

Horse has discharge from nose. Only troubled since wet weather. Trouble more apparent when she trots. Is it a cold or distemper and what is the treatment?—Subscriber, Imperial.

Catarrh or cold in the head often follows getting wet. Get eight ounces of nitrate of potash and six ounces of chlorate of potash. Mix and give a tablespoon in the drinking water two or three times a day. Keep the horse in a warm place at night and do not drive too fast. Overdriving a horse in this condition may cause broken wind.

Worms

A mule seven years old has cough but no sign of distemper. Stays in poor condition. Has ravenous appetite and never seems to get enough to eat. His coat is rough. He is idle most of the time and is fed good oat hay and alfalfa. What is best for him?—Subscriber.

Probably he has worms. Get the following powders of your druggist: Ground gentian four ounces, ground nux vomica two ounces, sulphate of iron three ounces and enough farina to make one pound. Give a tablespoon once a day. If you can get good wood ashes mix a pint of it with two quarts of salt and give a tablespoon of that also once a day.

Wire Cut

About three months ago my young horse got a wire cut between the hoof and the lower joint of the leg. I used sheep dip and peroxide and it is healed very well. She is almost well but limps just enough to be noticeable. She also has a small swelling between the lower joint and the knee something like a splint. Do not know whether she limps from this swelling or the cut. What is best to do for it?—Subscriber, Santa Maria.

The lameness may come either from the splint or the wire cut. Rub the splint hard with a round stick and grease it once a day with a liniment made of equal parts of turpentine and bacon grease. Use the same liniment on the wire cut to keep it soft and have the foot cut even the same as you would to have it shod so he will walk straight on it. A hoof that is longer on one side than the other often causes lameness that may result in ringbone.

Sick Colt

I have a colt 19 months old that I had castrated about a month ago. He is healed up but his right side bloats and he seems to be stiff in his hips at times. Had a veterinary see him and he said it was impaction of the bowels. Gave him three doses of raw linseed oil, a pint and a half at each dose. It loosened the bowels a little but not enough. When he drinks much water he breathes fast. When he urinates it seems to hurt him. Could it be some trouble with the kidneys that causes the bloat on his side? Please advise me what to do.—Subscriber, Coalinga.

It is hard to diagnose this case without seeing the colt. It may be that he had a fall and hurt something inside or an abscess may be gathering inside from distemper. Probably the best thing you can do for him is to continue the oil but be sure the oil is the raw linseed and not the boiled that is used for paint. Add an ounce of turpentine to each pint of the oil. Also give him a teaspoon of saltpetre twice a day for a week.

Rheumatism

I have a young cow that will be fresh in January. I think she has rheumatism and want some advice regarding her. She is kept in an alfalfa pasture on low land. It gets cold there at night and there is always moisture on the grass in the morning until late. She has trouble in walking and seems to throw her legs out of joint at times so she can hardly bear her weight on them, sometimes one leg and then another. At present I am keeping her in a corral near the barn where it is high and dry. Should I keep her there or does it make any difference? Is it serious and is there any medicine that I should give her?—Subscriber, Orosi.

By all means keep her in the dryest place you have until the dew is off the grass and put a blanket on her at night. It is rheumatism and the following powders will probably relieve her. Acetate of potash eight ounces, bicarbonate of soda four ounces and salicylate of soda four ounces. Mix and divide into 32 powders and give one powder morning and evening.

Garget

About a year ago several of our cows had garget and about six weeks ago several of them took it again. The first time they had it we were told it was carried from one cow to another by the milkers, so this time from the start we washed the udder and hands in germ killer after milking each cow. Still six cows took it. We used the sterilized air treatment and gave them a garget remedy, but one cow went dry in one quarter. Is there anything to keep them from taking it again? Please explain how to prepare and use the iodide of potash solution spoken of in the Cultivator of Sept. 3d? What to use to inject it and how much to inject at a time?—Subscriber, Tulare.

Garget, being brought on by several different causes, is hard to guard against but once it is present use plenty of antiseptics and clean up the stable. A coat of whitewash is a great cleanser. The iodide of potash solution mentioned is the same as was used for milk-fever before the air treatment was discovered. First clean a quart bottle by filling and rolling it in boiling water. Dry it in a hot oven. Then put two drams of iodide of potash and three or four drops of carbolic acid in it and fill with boiling water. Cork tight and allow to cool to body temperature. Pump one-fourth of the solution into each teat. Use a household syringe (one with the bulb in the middle), replacing the ordinary nozzle with a milk tube. Be sure to sterilize the syringe before using it. The solution should be milked out in half an hour.

Rheumatism

I have a well cared for cow which has rheumatism in her front leg. What do you suggest to give her for it?—Subscriber, Riverside.

Give her the following powders: Acetate of potash eight ounces, bicarbonate of soda four ounces and salicylate of soda four ounces. Divide into 32 powders and give one morning and evening.

Quittor

Have a heavy horse with a split hoof (as per sketch inclosed). Have bathed, greased and done everything I know, but it does not get well. It seems that the hoof is decaying and is full of pus. It also swells above the hoof.—Subscriber, Creston.

An abscess in the foot is called quittor. It may have been caused by an ill fitting shoe. The wall and sole around the opening where the pus escapes should be entirely cut away and the abscess syringed to the bottom of the cavity where the pus comes from with a solution of bichloride of mercury, one part to 500 parts of water. You can get the tablets at the drug store and use two to the pint of water. Warm the solution before using it. If a veterinarian is in reach you had better get him to treat it for you. Have him blister it above the hoof which will hasten the repair.

THE INIMITABLE YOUNGSTER

"What are you doing, Tommy?" teacher inquired in her sweet manner.

"Drawin'," was the sullen response.

"Drawing what, Tommy?"

"Drawin 'a picture of God."

"But, Tommy," said the teacher, "nobody has ever seen God. Nobody knows what He looks like."

Tommy was undaunted. "Well, they will when I get this picture drawed."

SALE OF DRAFT HORSES

The California Draft Horse Breeders' Association is taking steps to determine whether or not it would be feasible or advisable to attempt to hold a public sale of breeding-draft horses. The idea is, if possible, to establish a custom of holding an annual sale, so that breeders may count definitely on this event as a suitable time for disposing of their surplus breeding stock. If the sale can be held this year, it will probably be carried on at the university farm at Davis sometime during the latter part of January or the first part of February. The entire management of the sale would be in the hands of the association. Only sound, registered horses would be accepted for sale, but it is not necessary that you be a member of the association in order to send consignments. The board of directors is now busy attempting to find out who wish to make consignments to such a sale, and they will be glad to hear from anyone that is interested.

A large shipment of New Zealand butter is expected to arrive soon in the port of Seattle.

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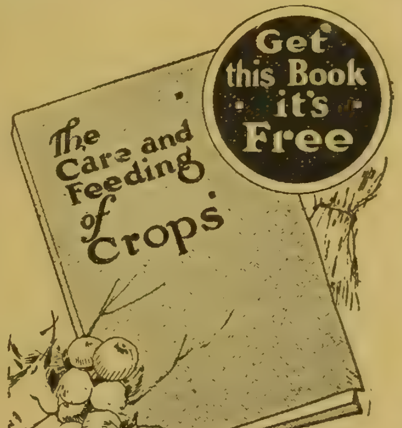
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8,000 rods of 6-in. galvanized mesh extra heavy field wire fence. Perfect condition. 55 in. high, 20 rods to roll, special while it lasts at only, PER ROD ... 35c This is just about half price. Don't pass up this big opportunity. Send us your order. your money back if you are not satisfied.

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1-ply per sq. ft. ... 1c
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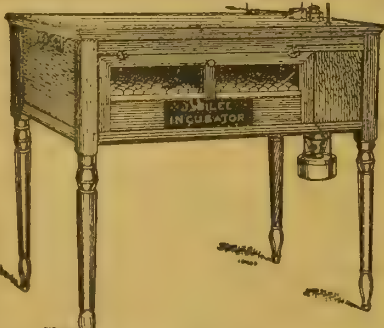

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Poultry for Profit

THE THANKSGIVING TURKEY

Written for California Cultivator

By Jean A. Koethen

WE are accustomed to think of the turkey as having been discovered by the pilgrim fathers when they landed on the "stern and rock-bound coast" of Massachusetts in 1620, and it is rather a disappointment to learn that the bird, although a native of America, was well known in Europe more than 50 years before the Pilgrims turned their backs on England. The earliest known description of it is in an old Spanish book supposed to have been written in 1527, which speaks of the turkey as already having been taken from New Spain (Mexico) to the Islands of Castillo del Oro, where they had been tamed and bred in a domesticated state. These North American birds were well known all over Europe before the seventeenth century and seem to have been then as now a favorite dish at celebrations.

The American wild turkey was quite well distributed over the whole country, being found by the early settlers from the Atlantic to the Pacific and from the Great Lakes to the southern boundary of Mexico. The variety found in Mexico differed from that of the north, in that it had a band of creamy white or silver grey across the tips of the tail feathers and of many of the body feathers, while in the north this band was chestnut or chestnut brown. Undoubtedly our Mammoth Bronze turkey, the finest of the race, is the descendant of these Mexican birds, though there have been many out-crosses. The wild turkey is gradually disappearing but there are still enough left in the mountain fastnesses to furnish a little wild blood as a tonic for the ills of inbreeding, and this wild blood is much sought after. In time there will be no more, and then the turkey must either adapt itself to domestication, as the domestic hen has done, or degenerate as it does wherever it is inbred for years.

The Turkey a Wild Bird

When we consider that it is only a matter of 400 years since all turkeys were wild and that the domestication of our American birds dates back for the most part a much shorter time than that, while the hen has been bred in domestication at least 2000 years, it is easy to realize what a large part this inherent wildness plays in its rearing. Turkeys after they pass babyhood need no shelter, save perhaps in the heaviest rainstorms, nor can they be fed as chickens are fed without regard for exercise. With the turkey exercise and feeding go hand in hand. Watch them as they stroll out in the morning, nibbling and picking as they walk, here a bug, there a fly and again a weed, seed or a bit of gravel. This is their natural way of feeding, and he who would rear them successfully must imitate nature as closely as may be. Trying to raise turkeys in close confinement is going "ag'in nature" and is rarely successful.

Varieties

Seven varieties of turkeys are recognized by the American Standard of Perfection: The Bronze, Narragansett, White, Black, Buff, Slate and Bourbon Red. Of these the Bronze is the largest, with the Narragansett and Bourbon Red second, the standard weight for the adult Bronze cock being 36 pounds and for the other two, 30 pounds. The other four varieties are considerably smaller, the standard for the White Holland cock being 28 pounds and for the others, 27 pounds. A Bronze hen of standard size weighs 20 pounds; those of all the other breeds weigh 18 pounds.

The Narragansett turkey was developed in Connecticut and Rhode Island and gave those states a most enviable reputation for producing fine market birds until blackhead came and ruined the industry in New England. It is a bird with a very large development of breast and is popular throughout the east. Neither the Narragansett, the Buff or the Slate is raised on the Pacific Coast. The Bronze leads in popularity here as elsewhere in the United States; there are many fine flocks of White Hollands and Bourbon Reds and a few flocks of Black turkeys.

The Mammoth Bronze

Doubtless the Lord could have made a more beautiful bird than the Mammoth Bronze turkey, but doubtless He never did. With its brilliant blue-red head, the sheen of its plumage, showing now a coppery bronze, now green, now blue, now black, as the light changes, its lordly carriage and magnificent size, it is a bird to be proud of if you own it, and to covet if you do not. Chief among its admirable qualities, and doubtless characteristic of all turkeys, is its gentle, friendly disposition. You can make friends of chickens if you try. You make friends of turkeys without trying. The hand that feeds them is the one hand in all the world to them. Strangers excite suspicion, as is shown by the animated gobbling with which they are greeted, and the appearance of a red sweater awakens wrath and indignation, but they always run to meet "mother," or roost on the doorstep to await her coming, or come hurrying home at the sound of her voice. My turkey toms remind me of nothing so much as a lot of mischievous boys, a little rough sometimes, but always human underneath.

The Bronze turkey is hard to raise, but very hardy once it is raised. It has a reputation for wandering and another for staying at home. My Bronze turkeys never wander, but I think this it because they are raised by chicken hens. Probably young turkeys will wander with a turkey mother as readily as they stay at home with a hen mother. Where young stock are expected to pick up their living over a large range it is best to raise them with turkey mothers.

The Bourbon Red

The Bourbon Red turkey is increasing in popularity everywhere, though it is so new a breed that it was admitted to the Standard but four years ago. The color is a dark or brownish red, with white in the wings; tail tips of some of the feathers bluish bronze, and an undercolor that is almost white, although many breeders prefer buff. Its origin is not known, but it seems to have developed in Kentucky and southern Ohio. It is probably no hardier or better in any respect than the Bronze, unless the smaller size of the tom be an advantage. Undoubtedly there is more demand for market birds weighing less than 20 pounds than for larger ones, but the Bronze turkey hatches in May, reaches a good, marketable size of from 15 to 20 pounds by Thanksgiving, and this is a size which suits most families very well and puts a little greater profit in the pocket of the producer than a smaller bird might.

The White Holland

Next to the Bronze, the White Holland is most popular. It is thought that it originated in a sport form the Bronze, though there is a tradition that the first birds were brought to this country by the early Dutch settlers, hence the name. The White Holland has been much advertised as "the stay-at-home turkey," but how it could stay at home more closely than the Bronze does when raised by a domestic hen is hard to see. Its small size and freedom from dark-colored pin feathers make it a very satisfactory market bird, and its snowy white plumage and red head make it almost too showy when hawks are about and the bird is young and small.

Belongs On the Farm

The ideal place for raising turkeys is on a large grain or alfalfa ranch where the birds can roam at will and pick up their living as they go. Where all their food must be bought they are not very profitable, for they are very large eaters and there is always danger of overfeeding them. Where they have suitable range they are very profitable, as many a farmer and farmer's wife has found. On the large ranches of Imperial Valley, San Jacinto and the desert country and the grain farms of the San Joaquin Valley thousands of birds are raised every year for marketing in Los Angeles and San Francisco at Thanksgiving and Christmas. If they are properly bred and reared there is no reason why they should not mean immense profit to every farmer for the demand is almost unlimited in spite of the high prices.

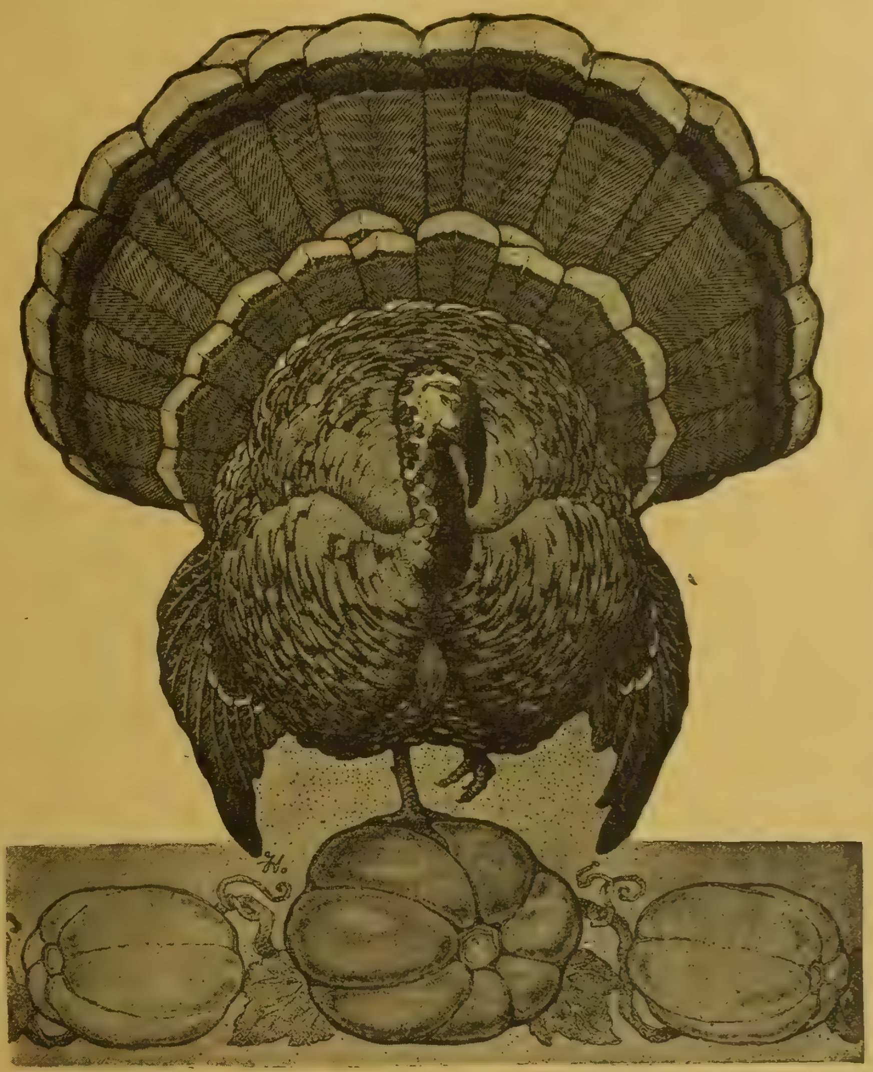
Breeding Turkeys

Much depends on the character of the birds chosen as breeders. It is not wise to breed from hens under two years of age. Pullet's eggs often hatch well, but the young birds are smaller and lack the stamina of those hatched from mature mothers. A young tom mated to two or three year old hens usually gives the best results.

In choosing breeders select the large, early hatched birds. Many farmers tempted by the high prices paid just before Thanksgiving let their largest birds go and keep the smaller ones for breeders. Late hatched birds are rarely good breeders.

Select a tom that is near standard size if you want to keep up the size of your flock. Standard weight for a Bronze yearling cock is 33 pounds, and for a cockerel, 25 pounds. The Standard gives no weights for White Hollands and Bourbon Reds, but the cockerel should weigh 20 pounds. I suppose the term cockerel here means a bird of the right age to mate, which is about ten months. My Bronze cockerels this fall weighed 15 pounds when they were a little past five months of age, so they should easily reach standard weight in another five months. The male bird chosen to head the flock should also be well marked and very vigorous. A young bird of large frame, though thin, makes a larger adult than a fat bird of smaller frame.

It is particularly important that the breeding birds be unrelated. Some authorities say constant inbreeding is the cause of the prevalence of blackhead and the consequent destruction of the industry in many parts of the east. Inbreeding weakens the vitality of the stock and makes it a prey to disease. Expert breeders never mate turkeys that are in the slightest degree related. It costs money of course to buy a new tom or new hens every year, but it must be done if turkey raising is to be successful. Mating brother to sister or daughter to sire is entirely wrong and means only disaster. One male bird is sufficient for seven or eight females and in some cases for twice as many, but it is safer to purchase another tom if the number of hens is over eight or ten.



THE RABBIT INDUSTRY

Written for the California Cultivator
By R. V. Moore

As meats increase in value the attention of the public is called to the problem of finding a substitute. Rabbits are near the head of the list. This is due to the fact that they can be raised so cheaply in comparison with poultry and other fowls and animals. They make quick growth, have nice flavored white meat and, last but not least, have remarkable breeding qualities under all kinds of conditions. Furthermore, they require little attention and are not subject to disease where kept under reasonably clean conditions. Their chief enemy is hot weather.

The three best known breeds today before the public for culinary purposes are: Flemish Giants, Belgian hares, and last but best for dressing for market, New Zealand hares. The last named, as they become better known, are rapidly coming into popular favor as the ideal rabbit for the market, for anyone who has dressed them for the table and stripped them of their beautiful red or reddish tan fur can appreciate their good qualities over the other breeds. The Flemish Giants, the largest of domestic rabbits, as well as bringing the highest prices when exhibition rabbits are taken into consideration, have the fault of not breeding true to color; a breeder hardly knows what color to expect in a litter of youngsters. Some are jet black, others light and steel grey, and those which are known as silver-tips have a coat of black with white hairs scattered promiscuously. The steel greys are the most valuable. The Belgian hare, known everywhere, needs little comment from the writer, and like the New Zealand hare, has more at a litter than the Flemish Giants. If the litters are too large many breeders reduce down to four or five in a litter, for with this number the young will mature much more rapidly and be more hardy.

The winter months find a greater demand for rabbits than the summer, as many people refuse to eat them during the summer time under the mistaken idea that they are diseased like so many of the wild jack rabbits and hares of the plains. In fact, in Los Angeles during the past four months up to September 15 I have had hundreds of rabbits offered me as low as eight cents a pound, but these prices will not continue from now on during the winter months, for as the tourists arrive the hotels and cafeterias will take more of the rabbits. In Los Angeles, where one has to buy alfalfa hay by the bale for his rabbitry, I have often heard it said by those qualified to speak on the subject that rabbit meat cannot be produced under 12½c per pound. Alfalfa hay, together with bran and crushed barley, usually comprise their staple food supply with a bountiful supply of clean fresh water before them at all times.

When rabbits are better known among the general public, like squabs, they will be used far more extensively.

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Legal Queries

Louis B. Stanton, attorney, 243 Wilcox Building, Los Angeles, will answer legal queries in this department.

Immediate mail replies cannot be given except where fee to Mr. Stanton is paid. When replies are wished in Cultivator address query to 115½ N. Broadway, Los Angeles.

Accounts Outlawing

Do open accounts, such as general merchandise bills, outlaw in two or four years?—Subscriber, Dinuba.

Open book accounts outlaw within two years from date of last purchase or acknowledgement in writing of the indebtedness. If it was in the nature of a mutual account, such as is the case with some farmers turning in produce and receiving credit and obtaining merchandise, it would not outlaw until four years after the date of last transaction.

Accident on Bridge

In case a team goes about 200 feet on a long narrow bridge on the county highway and there is no other vehicle, person or conveyance of any kind on said bridge at the time, then an automobile coming from the opposite direction reaches the other approach some 600 feet ahead of team, has the automobile the right to enter on and continue to cross said bridge, which is hardly wide enough for two gentle teams to pass? And if auto does continue on its course and frightens team, causing damage to the rig or occupants, is the owner of automobile liable for damages?—Subscriber.

The facts which you have stated are not sufficient in themselves to constitute any cause of action against the driver of the automobile, as he had as much right upon the county bridge as you had. There are undoubtedly circumstances, however, in addition to those which you have stated which might show his liability.

Birds Destroying Crops

Does not the farmer have right to shoot any game birds which may be destroying his crops, and at any period of the year?—Subscriber, Modesto.

The act providing for issuance of hunting licenses expressly excepts predatory birds or animals. Section 637-A of the Penal Code expressly provides that nothing in that section prohibits killing of non-game birds found destroying crops growing upon the premises of the farmer.

Straying Animals

When a person puts up loose stock, hogs for instance, depredating on his premises and destroying his crops, and duly notifies the owner according to law, how long must he hold and feed such animals before he can dispose of them for damages and cost of feeding, providing the owner does not come near and settle up and secure release of his animals, and how must one proceed to dispose of said stock to get damages?—Subscriber, Greenfield.

When you know the owner of the straying animals you may within five days after said animals were taken up notify him, for which notice you are entitled to the sum of 50 cents. This notice should thereupon be recorded in the office of the county recorder. It should contain a description of the animals, together with the probable value and statement of the place where found and where the taker-up has confined said animal. Thereafter within 30 days from the recording of said notice, the owner of the animal may reclaim same upon paying to the taker-up the costs of recording notice and of giving said notice, which includes, in case the owner is not known, the costs of publication of said notice for two weeks in some newspaper published in the county where the straying animal is found, providing said cost of publication does not exceed $3.00, also the sum of 30 cents a day for the keeping and care of each horse, mule, jennie, ass, cow, bull, ox, steer or calf, and the sum of 10 cents per day for the keeping and care of each sheep, goat, hog or other animal not specified. If no owner appears within 30 days, the taker-up should notify the constable, which notice should specify that he has complied with the provisions of the act, that the owner has failed to appear or has failed to pay the costs. The constable shall thereupon immediately proceed to sell the animal at public sale, and out of the money realized therefrom will retain his own fees for the sale, then pay the taker-up his costs, and the surplus, if any, he will pay to the county treasurer.

Procedure in Lawsuit

In case demurrer is overruled, in what length of time must defendant answer? If defendant does not answer, what are then the rights of plaintiff?—Subscriber, Lemon Cove.

Usually, unless the court otherwise orders, defendant has ten days after the overruling of the demurrer within which to answer. Within ten days after notice to him of the ruling of the court and failure to respond upon the part of the defendant, default and judgment may be taken against the defendant the same as if he had not answered the complaint. Demurrers raise a question of law upon the complaint and they are usually brought up for argument on some special day of each week while court is in session.

Income Tax

Suppose I have an income this a year of $8000 and am in debt to the full amount. If I pay my debts must I borrow money to pay my income tax?—Subscriber, Corcoran.

Payment of debts is an offset against income, and it is only the net income after payment of debts and losses, that is taxed. Thus with your income of $8000 and payment of debts to the full amount of $8000 or paid debts to the amount of $4000, if you are a married man, you have no income tax to pay.

Final Settlement of Estate

How long after the administrator is appointed must there be final settlement of an estate?—Subscriber, Greenleaf.

There is no time limit within which an estate must be settled, it depends entirely upon the conditions of the estate itself.

Hunting on Unfenced Property

Has one the right to hunt on uncultivated, unfenced private property, there being no trespass notices posted?—Subscriber, Coalinga.

Every person, who without permission of the owner, enters upon enclosed or cultivated grounds, which are private property and where signs are displayed, not less than three to the mile, for the purpose of hunting, is guilty of misdemeanor. Thus in the above stated facts there would be no penal liability, but you might be held responsible in civil action for nominal damages.

To Quiet Title

A and B own adjoining property. It is quite desirable that A have B's property, but for several years nothing has been heard of B and all efforts too locate him have failed. What steps are necessary for A to take to come into possession of B's property, A having paid taxes on same for six years?—Subscriber.

If you have enclosed the property of B by substantial enclosure and usually cultivated the same for a continuous period of five years or more and paid all taxes levied or assessed upon the same, you may bring an action in the superior court to quiet your title to this property under ground of adverse possession.

NAPA COUNTY FARM BUREAU

Farm Adviser H. J. Baade of Napa County writes: "The members of the Napa County farm bureau have succeeded in getting the Napa River cleared of all obstructions so that during the coming season the water will be able to run off better and not flood the rich farms of the valley. Every farmer having land on the river agreed to cut out any rubbish, trees and debris.

"The farm bureau called a meeting of all the farmers interested in dairying at the Napa Chamber of Commerce, November 21, for the purpose of organizing a cow testing association. Already 800 cows have been pledged for the association and the success of this undertaking is assured.

"The members of the farm centers have ordered three carloads of air slacked lime for their soils. In all, Napa County this season used nine carloads of lime on the soil."

TELLING YOUR AGE

I know you won't believe me when I tell you that I'm only eighteen, but really when I was nine years old people used to take me for twenty. I was always mature and sensible, and I've always thought a whole lot and, thought is bound to leave its mark on you. Why, my father had gray hair when he was sixteen, but that doesn't mean anything. I have a friend who's only fourteen and yet everybody takes him for a man of sixty. You can't always judge by appearances because I have another friend who's thirty-eight and has a family and yet he looks so young people take him for his own son. I know you think I'm not telling the truth, but why people should lie about their age is more than I know.—New York Sun.

"This war can't last forever," the cotton growers are assured. But, unhappily, neither can the cotton growers.

A Tip on Almonds

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Grafted Franquette Walnuts—Our nuts bring $100 more per ton than the best Santa Barbara seedlings and our Royal root grows 50 per cent faster than the average California root. It took us ten years to develop this combination. It is at your immediate disposal. Write us for number you need. Catalogue and price on application. Imperial Walnut Nurseries, R. D. 7, San Jose, Cal.

Walnut Trees—Late blight resisting varieties grafted and budded on California Black and on FIRST GENERATION Royal and Paradox Hybrid roots, which are as much superior to the California Black root, as the California Black Root is to the English root—Eureka, Franquette, Mayette, Neff's Prolific, Concord and Placentia. Dr. W. W. Fitzgerald, Elks' Building, Stockton, Cal.

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For Sale—50,000 Sour Orange seed bed stock, fine quality, or will let to responsible party on percentage basis; also 2000 A1 late Valencias, two years old next spring, or might exchange for Washington navels. H. H. Eshelman, Soldiers' Home, Cal.

For Sale—Mission Olives; will be two years old next March. To be absolutely sure of getting Missions I only propagate from my own trees, raised by me thirty years ago. Also cuttings from same trees for sale. W. A. Hayne, Marysville, Cal., Box 461.

For Sale—At Corning, 4,000 Mission Olive trees from three to seven feet in height. Cuttings selected from the best producing orchards at Corning. Trees mostly two years old in March. Address Midland Counties Land & Irrigation Co., First National Bank Bldg., San Francisco.

Now is the Time to book your order for fig trees. "My Specialty." 25,000. Seventeen varieties, extra fine, well rooted, straight and branched, one and two year old trees. Price list on application. C. C. Terbush, R. F. D. 2, Box 543, San Gabriel, Cal.

The Walnut Nursery has a fine lot of grafted walnut trees again this season, Chase, Eureka, Mayette and Placentia Perfection. Order now and get the best. W. A. Litten, Prop., R. F. D. No. 2, Whittier, Cal. Home phone 7863.

Walnut Trees—Eureka and El Monte varieties a specialty, also Franquette and Placentia. Write for prices and description of stock. Personal inspection invited. Eureka Walnut Nursery, Montebello, Cal.

Potrero Heights Walnut Nursery—Placentia Perfection Walnuts a specialty. Native Black Walnut roots. Get my prices and order early. Address A. H. Jessup, San Gabriel, Cal., Route 2.

The 1200-Acre Nursery, growers of 1500 varieties of trees and plants. OREGON NURSERY CO., Orenco, Oregon. Sales office, 522 Chamber Commerce, Los Angeles, Cal.

For Exchange—High grade citrus trees for Ford or Buick Roadster or Touring or similar light car or good work team or wagon. McMillan Citrus Nurseries, 221 N. Curtis Ave., Alhambra, Cal.

Franquette and Mayette grafted on Northern California Black, 3 to 10 feet. Prices right. Special discount on large orders. Sunset Nursery, 525 W. San Carlos St., San Jose, Cal.

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Fig Trees—2000 Calimyrna (Smyrna) and Caprifig trees for sale. Make offer for one or all. Strong, well grown stock. W. F. Lowe, Roberts P. O., Cal.

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Citrus Nurseries, Murphy Oil Company, East Whittier, California. Selected stock for sale; inspection invited.

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Macfarland Strain White Leghorn eggs $5 per 100, chicks, Jan., Feb., $12, afterward $10, order now, any quantity. Cockerels $2. White Rock eggs, chicks, cockerels; write for prices. Big plant, best stock, lowest prices. Newton Poultry Farm, Dept. 3, Los Gatos, Cal. N. B.—See article about us by Prof. Adams, U. C., in October Poultrycraft.

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Rhode Island Red baby chicks Wednesday, Dec. 2nd. I can ship you some of these chicks at $12.50 per 100. Spring broilers will bring you some money. I guarantee safe arrival at your express office. My specialty is pleased customers. I have Plymouth Rocks same price. J. W. Lyon, Gardena, Cal.

Poultry Wanted—We pay the highest market price for all the local poultry we can get, no matter how large the quantity; also fresh ranch eggs. We remit immediately. National Poultry Co., successors to Allaway & Layton Co., 607 E. Third St., Los Angeles, Cal.

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Mahajo Farm offers old and young stock, in small or large lots, in White Rocks, Rhode Island Reds, Black Minorcas, White, Brown and Buff Leghorns and Indian Runner Ducks at reasonable prices. Address Mahajo Farm, P. O. Box 597, Sacramento, Cal.

For Sale—Two yards white Minorcas, first, 6 pullets, cock. Other, 6 yearling hens, cockerel, fine birds, laying. Baby chicks after January of Buff Leghorns, R. I. Reds, White and Black Minorcas. Gem City Yards, Los Gatos, Cal.

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VICTORIA, AUSTRALIA, WANTS SETTLERS

Special inducements; government land railways, two schools; cheap irrigation 31 years to pay for farms adapted to alfalfa, corn, grains, fruit, etc.; climate like California, ample markets, reduced passages; special excursion being arranged Free particulars from F. T. A. FRICKE Government Representative from Victoria, 687 Market St., San Francisco, Cal. Box X.

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Prize-Winning Stock of Poland Chinas and Mulefoot Swine—Fine boars of service age for sale. Mulefoot pigs, both sexes. Dairyland Stock Farm, Chowchilla, Cal.

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$70 and $50 for Orders Placed Now with cash for present or future delivery. Luther Burbank $70 per 1000 slabs. Mediterranean $50 for 1000 slabs. Luther Burbank and Mediterranean Spineless Cactus Plantations, San Dimas, Cal., R. F. D. 35-A. Agents wanted.

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For Sale—Alfalfa seed free from bad seeds, fine quality, at 14c lb. Inquire of H. S. Garrison, Murietta, Cal.

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MISCELLANEOUS

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Sharp's White Holland Turkeys made a clean sweep at California State Fair, including sweepstake. And also at Fresno County Fair. ALSO snow white Leghorns, stock for sale. Henry Sharp, R. 2, Box 70, Selma, Fresno Co., Cal.

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Thoroughbred Bourbon Red Turkeys. Fine large yearling toms $10. Toms last April hatch $7.50. Hens $5. W. S. Bernard, Anderson, Cal.

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WANTED

Man Wanted—To a man furnishing a bunch of cows to establish a dairy on my 70-acre alfalfa ranch in the Pomona Valley, I will sell a part or half interest at $350 per acre and let him take charge of the place on cash or share basis. Herbert F. Clark, 31 N. Granada, Alhambra, Cal.

Wanted—Position by single man as working foreman for orange or lemon grove. Expert in budding and pruning. 22 years experience. References furnished. Address, Box W, Cultivator Office, Los Angeles, Cal.

Farms Wanted—We have direct buyers. Don't pay commissions. Write describing property, naming lowest price. We help buyers locate desirable property Free. American Investment Association, 12 Palace Bldg., Minneapolis, Minn.

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For Sale—New Zealand Reds, fine breeding stock. Also Barred Rock eggs for hatching. Mrs. C. A. Richey, R. D. 8, Box 557, Los Angeles.

BEES

Beekeeping Pays Big—Price list, bees, instruction books, etc., free. Spencer Apiaries Co., Box 14, Nordhoff, Cal.

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When you keep a boy interested in football, baseball, tennis, and the like, you lessen the chances that he will get interested in things not so good for him.

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Questions and Answers

THE EDITOR AND STAFF

Questions to be answered in this department should be received at this office one week before reply is expected. Write plainly on one side of the paper and sign full name and address. Unsigned communications receive no attention.

Oranges Between Peaches

Can you tell me through your paper if it would do to plant orange and leemon trees between peach trees (Lovells and Muirs), and can I grow them successfully that way, after some years taking out the peaches? My ranch is five miles northeast of Selma. The peach trees are 20 feet each way. Will that be room enough for the oranges and lemons? The soil is a white ash (no alkali) and I have had it tested at Berkeley. Where can I buy trees true to name? What kind of root should oranges be grafted on? How about the lemons? Is there any difference in flavor between valley and foothill grown oranges, also comparative price?—Subscriber, Selma.

It takes very careful work to start a new orchard with the old one still occupying the ground. Peach trees which have reached bearing age are practically interlacing their roots in the centers when planted 20 feet apart. If one would go down the rows with subsoil plow and cut off the roots which reach over to where the orange trees will be planted and then use care to give sufficient water and deep cultivation it is probable he could bring orange trees into bearing, but it is more likely that a bit of neglect at some time, with the peach trees drawing the moisture and fertility from the soil, will cause the orange trees to be much smaller than they would have been if planted by themselves. Twenty feet apart was at one time the rule for orange orchards, while 24 was the rule for lemons, but we believe the general practice today is to give rather greater space, 24 feet for oranges and perhaps 30 for lemons. However, there have been many profitable orchards planted at 20 feet. More water and fertilizer are of course necessary where planted so close. To secure trees true to name deal with reputable nurserymen who are wholly responsible. The stock to be grafted upon is usually the Florida sour orange. Most of the nurserymen are now using this. The difference in flavor between foothill and valley grown is not so decided as that of frost effect though of course trees which are grown where the weather is continually cool throughout the winter are more likely to be thick skinned and to show rag.

Avocado Seed

Would like information as to where to get avocado seed. Is the seed of the wild mango of the Philippines desirable to bud avocados to?—Subscriber, Fowler.

When avocado seed could be had from Mexico any seedsman carrying an advertisement in the Cultivator could have supplied you. At present, however, the state has quarantined against seed from Mexico because of a fly which is infesting many of the seeds brought from that section, but there are some native-produced seed which may possibly be had if application is made to the seedsmen. We have never heard of budding the avocado on mango.

Morning Glory

A subscriber writes from Orosi as to his experience with morning glory. It is well worth a thorough trial. He says: "Several years ago in Ohio I had a piece of ground infested with morning glory, the worst I ever saw. For years I tried everything I could think of, planted it to corn, potatoes, rye and wheat, and plowed the ground several times during the season, but without success. I wrote to Farm and Fireside for a remedy and they recommended sowing millet. The following spring I prepared the ground and planted millet, sowing it a little thicker than for hay, and it killed out the morning glory root and branch. If the inquirer will try this plan I doubt if he will have any further trouble. I tried this on two different pieces of ground with the same results. Be sure and have the ground in the best of condition so the millet will take root easily."

Violets in San Joaquin

In what kind of soil will California violets thrive best in this part of the valley?—Subscriber Hanford.

The soil for violets is the same in all parts of the world. It should be loose and friable, never baking to a close hardness. While pure sand does not produce good violets, a rich sand (full of humus) of any color but white is ideal. Soils cannot be too rich for violets except when there is an excess of nitrogen, which induces growth of foliage but not flowers.—E. B.

Mildew on Roses

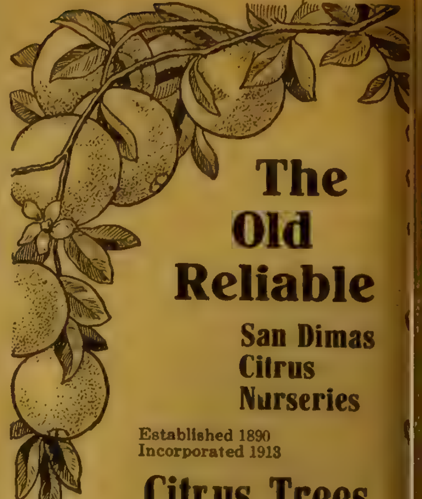
Leaves of rose bushes crumple up and at the joints of the thorns in the stems there forms a white spot. Have examined the bushes for lice but can find none, and they are not in a damp or shady place. They get the afternoon sun.—Subscriber, Los Angeles.

The "crumpling" of the leaves indicates downy mildew. The "white spot at base of thorns" proves it, for it is present there when apparent on no other part of the world. The causes are too many to specify. Combat mildew with sulphur very lightly dusted over all the foliage when the latter is wet with dew in the morning preceding a hot day. Heat of sun alone renders sulphur effective.—E. B.

Swellhead

I have two fowls whose heads are swollen and sore. It is difficult for them to breathe and they seem to wheeze.—Subscriber, Alta Loma.

Your chickens probably have swellhead, one of the many forms of roup, but I should examine the scratching litter and food for any trace of mould. Sometimes the mould spores lodge in the throat and mouth and grow there, causing difficult breathing, depression and death. For swellhead the kerosene treatment is as good as any. Put a teaspoon of kerosene on top of a lard pail of water and dip the chicken's head in so that it is entirely covered, holding it under while you count three. Then put the bird in a warm, sunny place, taking care that it roosts in an open front house with no draft, and feed plenty of animal food and greens. Repeat the treatment three days in succession. Don't forget to look for the cause of the trouble. Is there dampness in house



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of experience in the growing and handling of citrus nursery trees gives the buyer the advantage of starting out RIGHT, thus avoiding disappointment at the end of four or five years' labor, in bringing the young orchard into bearing.

ANOTHER POINT TO CONSIDER

Growing a good tree is only part of having it do well after planting. Many a good tree is ruined in the taking up from the nursery and shipping. We give the best of service in the proper handling and delivering of our trees.

WRITE,

'phone or call on us before buying your trees. Tell us your wants and we shall be glad to give you the benefit of our wide experience as to planting, soil conditions, fertilizers, etc.

Our illustrated new booklet on citrus culture mailed to any address upon receipt of 25 cents.

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Established in 1890 by R. M. Teague
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California
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Teague trees are started right, grown right, and shipped right.

or yard, mould in the litter, a draft on the head at night, lack of fresh air in the roosting house? See above all that your drainage is what it should be. The only satisfactory way of treating any form of roup is to get rid of the cause.—J. A. K.

Dressing and Marketing Turkeys

Which would be the most profitable way to market turkeys, alive or dressed? Would like full instructions how to dress and handle for the market as I am new at the business.—Subscriber, Merced.

When a grower is without experience in dressing and shipping and has not a very large number of turkeys, it is usually safer to ship them alive. Dressed poultry brings a better price, but if it is not properly dressed and cooled it deteriorates very rapidly and the producer is the one who must bear the loss.

It might be worth while for you to advertise in some San Francisco paper for customers to whom you could ship dressed turkeys by parcel post, or you might, if you have access to a San Francisco telephone directory, select names of families in prosperous neighborhoods, to whom you could send circular advertising the superior qualities of your dressed turkeys, but it is a little too near Thanksgiving for that. Shipping alive to a wholesale or commission house is the easiest way, and it may bring as good results as any.

When preparing turkeys for market pen them 12 hours without food so that the crop will be empty when they are killed. When ready to kill hang up by the legs on a string attached to the ceiling so that the head is about four feet from the floor. Lock the wings together by bringing one over the other and catching the tip of the upper under that of the lower.

Market turkeys must be dry-picked with the heads left on, and this means that they must be killed by "sticking." Use a long, keen, sharp-pointed knife. While holding the head firmly with the left hand, plunge the knife down the throat and draw it twice toward the bill so that the jugular vein on each side of the throat is severed, then quickly push the knife through the roof of the mouth into the brain, giving it a slight twist. The aim is to slightly touch the brain and partially paralyze the bird so it will loosen its hold on the feathers. If too much of the brain is cut away the hold on the feathers is tightened instead of loosened. If the sticking is done exactly as it should be, the feathers will come out very easily, but to do it properly, requires considerable practice.

Begin picking as soon as the bird has been stuck, and when it is picked plunge it into a barrel of cold water for an hour. When you take it out of the water hold it head down and give a quick jerk to get rid of the blood that has accumulated in the throat. Hang up by the feet to dry and cool. The bird will be ready to ship as soon as it is dry and the animal heat has left the body. Your dealers will tell you how many to send at one consignment.—J. A. K.

Pruning

Should I prune walnut and Satsuma plum trees which were set out last spring? The trees have made a large growth, and I have been told that they ought to be pruned now, while some say to wait until spring.—Subscriber, Van Nuys.

We would prefer to prune all trees late in the winter, but if late pruning interferes with spring work, do it at any convenient time after the leaves ripen and fall. There are some exceptions to this; for instance, large cherry limbs should be cut off in the summer time. Apricots may be pruned any time after the fruit is off the trees. The only advantage in late pruning is in the healing over of wounds. If pruned early they are exposed that much longer before they begin to heal over. Walnut trees should be pruned before the sap starts.—J. W. M.

Barley or Rye

Having received request from a subscriber for information as to the comparative value of rye and barley as humus formers when used for cover crops, we wrote Mr. J. W. Mills, who sends us the following:

"I cannot give very accurate information on this question, as I never made close comparative tests. It is our opinion that rye would make the most green stuff. Were we to try this out we would plant part of each. In either case there would surely be an abundance of green stuff provided plenty of water were applied at the right time."

Dwarf Bartlett Pear

Where can I learn as to commercial value and productiveness of the dwarf Bartlett pear, together with information as to the acreage at present planted to this fruit?—Subscriber, Mountain View.

So far as known only a few varieties of pears do well on quince stock, others making a very unsatisfactory growth. We do not know of Bartletts being grown as dwarfs. Duchess de Angouleme is recommended to be grown as dwarf. Some authorities on pears say that perhaps most varieties would do well as dwarfs provided the blossoms are removed during the first and second years. All varieties of pears seem to improve in color and flavor when grown on quince root. We would suggest that the state board of horticulture might give information or data as to the extent to which dwarf Bartlett pears are grown in California.—J. W. M.

Wool Quotations

Noticed in one of your late issues a request for remedy for lice on goats. Angora goats must be dipped for lice once a year. Use a good strong dip, one that you will have to keep their heads out of. This may be made at home, but the commercial or ready-made dip is more economical.—G. A. Werth.

Boiled Potatoes for Poultry

Could you tell me if boiled potatoes stop hens from laying, and why, if so? —Subscriber, Gilroy.

Boiled potatoes, being composed mainly of starch, might easily fatten the hens to such an extent that they could not lay, if they were made a large part of the ration. Fed in small quantities, however, they are healthful and beneficial. I would boil a few each day and use them in a moist mash with bran, table scraps, cut-up lettuce or alfalfa, cooked vegetables or vegetable parings, and about 15 per cent of beef scrap or cooked meat or fish scraps. A sheep's pluck (liver and lungs) or the heads and tails of fresh fish, which your fishman will sometimes give you if you ask for them, cooked with the potatoes and vegetables, makes a very palatable mash. Do not use middlings or corn meal in the mash with potatoes, for they, too, are fattening, and do not use the potatoes too freely. They will be very valuable when you want to fatten young stock or old hens for market. For this purpose you can make them half the mash and use corn meal and middlings for the other

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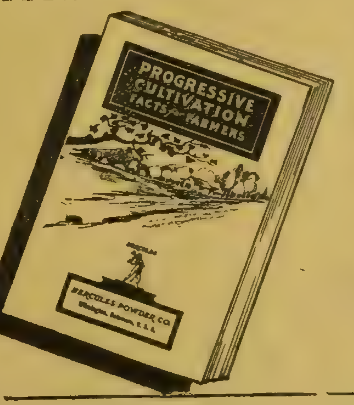
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—drive the material on at high pressure and have non-rusting ball valves, porcelain-lined cylinders, Bean patented pressure regulators and many other distinctive advantages. On account of their low-down, compact, perfectly balanced construction they are as easily handled on hilly ground as on the level.

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Don't hurry and don't worry—which does not mean to be slow or careless.

half. Whether the mash is for laying hens or market stock, it will be much better mixed with skim or sour milk. When milk is used meat is not needed.—J. A. K.

A Correction

In the reply to a Lompoc subscriber, in the Cultivator of November 12, page 474, the dry mash formula given should read "by measure" instead of "by weight." The difference is considerable, for some grains are much heavier in proportion to their bulk than others.—J. A. K.

Leg Weakness in Turkeys

Young turkey for two or three months has shown a peculiar leg weakness. We first noticed him stepping backwards, apparently to balance himself, and then it became gradually more and more noticeable, until sometimes he seemed to get tangled up with his legs and would fall or sit down. To-day we notice another fine gobbler affected in the same manner. Can you tell me the cause, and cure, if any? I suppose the turkeys are unfitted for eating.—Subscriber, Monrovia.

I think your turkey's legs must be weak either from lack of exercise or because there is too little bone-making material in the ration. You do not say whether or not they are confined. If they are this is probably the reason for the weakness. If they have all the range they want and still are weak I should blame the ration. A little fine ground bone in a bran mash two or three times a week would probably have remedied the trouble in the beginning. Turkeys require a good deal of bran which is a fine bone and muscle maker. Now the best thing to do, unless you wish to keep them for breeders, is to market them. The leg weakness does not unfit them for food in the least. Probably you will find them nice and fat. If you do not care to eat them, give them all the bran they will eat once a day and add a handful of ground bone three times a week, but above all make them exercise. If they won't go themselves, take a long stick and drive them.—J. A. K.

Chicken Pox

Can you tell me treatment for chickens that have sore eyes? First the lids swell around the eye till it is shut, then a thick tough pus forms over the eye and two or three lumps form on the comb like warts, some the size of a pea. One rooster I cured by putting peroxide in the eye but it came back. They don't seem to be sick, but eat heartily. I fed a little cotton seed meal in the mash for a while. Do you think that would cause it?—Subscriber, Whittier.

The lumps on the comb suggest chicken pox, which is often characterized by soreness of the eyes, just as it is in human beings. If the lumps increase in number, become yellow and finally dry up, treat for chicken pox by greasing them with carbolated vaseline and giving calcium sulphide, a grain to each adult fowl, in wet mash once a day till symptoms are improved. The eyes may be washed out with boric acid, half a teaspoon in a cup of warm water. It may be that this is a form of roup which affects the eyes, "roup of the eyes," it is called. It may be treated by washing the eyes out carefully twice a day with a two per cent solution of boric acid and chamomile flowers and syringing out the nostrils daily with two and one-half per cent solution of creolin and glycerine. If this is too much trouble try dipping the head once a day for three days in a lard pail of water on top of which is just a film of kerosene, or in water containing sufficient permanganate of potash to give it a good red color. Hold the head under while you count three, then remove the bird to a warm sunny coop and give a good, nourishing diet. Both roup and chicken pox are contagious, but chicken pox is very infectious as well. Quarantine all sick birds and clean up thoroughly or you will have it year after year. Look for moldy litter and for unwholesome conditions which cause disease. Perhaps your roosting coop and houses are too close and warm. Perhaps they are overcrowded or not very clean. Your chickens need just as much air and just as pure air as you yourself. I don't think the cottonseed meal had anything to do with the trouble.—J. A. K.

Guinea Fowls

Will you kindly advise me where I can get reliable information on raising and care of guinea fowls? Is it true that guinea fowl meat is becoming popular with high-class hotels? Do you believe that guinea fowls can be raised commercially at a profit? What is their ability as egg producers, and can they be successfully hatched in incubators and raised in outdoor brooders?—Subscriber, Calipatria.

An effort has been made in the east to boom guineas as a substitute for wild game but the boom has not reached California. There is absolutely no market in Los Angeles so far as I can learn for guinea flesh or eggs though the birds command a fair price as fancier's fowls. If you will notice the market reports you will see that while geese, ducks and turkeys are always quoted, guineas are never mentioned. This should in itself be a pretty good indication of the status of the bird. I do not see how guineas could be raised commercially at a profit when there is no demand for them for the table. Their eggs are said to be exceptionally fine, though small, but the public taste has not been educated up to them. Even in the east where guineas are bred much more generally than here and there is quite a demand for breeding stock and hatching eggs, their eggs have no market value. As the young birds are very hardy there would seem to be no reason why they should not be hatched and raised artificially, but I have never heard of their being raised in this way. The hens are very good layers, beginning in March or April and laying till late in the fall. The only publication I know of which gives information concerning the raising and care of guinea fowls is the American Poultry Advocate, published at Syracuse, N. Y., which has a department devoted to turkeys, waterfowl and guineas.—J. A. K.

Standard for Bourbon Reds

Is it permissible for a Bourbon Red tom to show a black rim on the back and fluff feathers? All my prize winners have a little black, and I have never yet seen a grown male bird without, but should like to know from good authority what is required.—Subscriber, Guasti.

The American Standard of Perfection for 1910, our highest and latest authority, gives the following requirements for color in Bourbon Red turkeys: Head and wattles rich red, changeable to bluish-white; beak, light horn at the tip, darker at the base; eyes, dark brown; neck, back, body, thighs, breast and fluff, deep, brownish-red; wing bows, deep brownish-red, primaries and secondaries, white; tail, white; shanks and toes, reddish-pink. The Bourbon Red is a new breed, derived from a cross, and is quite difficult to breed true to color, but it is plain from the above that the perfect bird has no black.—J. A. K.

Blackeye Bean

What is the value of the blackeye bean as a stock food when ground? How does it compare with oil meal, cotton seed meal, soy bean meal or the horse bean?—Subscriber, Arroyo Grande.

We are unable to find analysis of the California blackeye bean but it is in the cow pea class and, in fact, often called the cow pea, and in a table giving average digestible nutrients we find the cow pea analyzes crude protein 16.8, carbohydrates 54.9, fat 1.1, Soy beans analyze much richer in protein, as follows: Crude protein 29.1, carbohydrates 23.3, fat 14.6 Horse beans analyze crude protein 23.1, carbohydrates 49.8, fat 0.8; cottonseed meal, crude protein 37.6, carbo-hydrates 21.4, fat 9.6. Linseed meal analyzes crude protein 31.5, carbohydrates 35.7, fat 2.4. The dry matter in each case is practically the same, running from 85 to 93 pounds in each 100 pounds of meal.

The Richest Land in America

YUMA PROJECT COLORADO RIVER
SOFT SILT ALFALFA LAND

United States Government Irrigation System Now Completed, Furnishes Cheap Water

Richest and best Farming Land for intensive cultivation and plenty cheap water, never failing, from the Colorado River, the third largest river in the United States.

Several parties having about 5000 acres of this rich land under the Government Irrigation System close to Yuma a town of 5500 to 6000 people are subdividing this acreage into 10, 20 and 40 acres and larger farms, each on a county road. These county roads, north and south, are 70 feet wide, and east and west 66 feet wide, close to railroad.

The Government has the irrigation system and canals completed to this land and there is a lateral to each small farm. These small farms are surrounded by larger cultivated farms, fine alfalfa, barley, corn and cotton fields, dairy ranches, in a well improved part of the valley, all paying well and producing crops that cannot be produced in any other locality as abundantly. The climate is dry and most healthy and is the finest climate in the world for nine months each year; the other three months are warm, but not unbearable; men and teams can and do work all of the time without ill effects; sunstrokes and prostrations are unknown.

This is the greatest agricultural growing country in the world equal in all respects to the River Nile Valley and the great Chaldaean Plain. The lands are in the Delta Country of the Colorado river, rich from sediment, silt deposit, and produce immense crops continually without the necessity of fertilizing. The domestic water is good. The water for irrigation comes from the finest irrigation system in the world, built by the United States Reclamation Service, now completed at a cost of about $7,000,000. Main canals are 90 feet wide on the base.

Have pictorial booklet of the Land and Irrigation Project, glad to furnish, and plats showing locations.

Will sell these small farms on easy terms or exchange for lots, houses and lots, equities in same, or small acreage, and assume the encumbrance.

Glad to take you to see the land. Round trip rate $12.35 from Los Angeles, good any day. Call and see me or phone Garvanza 723. Will examine what you have and make you a proposition.

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Write for Maps, Particulars and Location

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A Real Service

To the farmers who use from 4 to 12 horses.

Send today for literature.

Weight 3500 lbs. Equal to 8 horses Price $1050.00

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500 E. 3rd St. **Los Angeles, Cal.**

The Household Department

"DOE YE NEXTE THYNGE"

From an old English parsonage, down by the sea,
There came in the twilight a message for me.
Its quaint Saxon legend, deeply engraven,
Hath, as it seems to me, teaching from heaven,
And all through the hours the quiet words ring
Like a low inspiration, "Doe ye nexte thynge."

Many a questioning, many a fear,
Many a doubt, hath its quieting here.
Moment by moment, let down from heaven,
Time, opportunity, guidance, are given.
Fear not tomorrow, child of the king!
Trust them with Jesus, "Doe ye nexte thynge."—Anonymous.

WOMEN'S SESSIONS AT THE STATE FRUIT GROWERS' CONVENTION

THE women's sessions at the recent State Fruit Growers' Convention in Los Angeles were of great interest. A practical program was presented by women who have made successes in different branches of horticultture. Mrs. Hilda B. Neilsen of Sebastopol talked on jelly making. Mrs. Sara Roberts of Grass Valley sent a paper on home canning of fruits and vegetables, which was read by Miss Lilian D. Clark, in charge of the sessions. Miss Sessions of San Diego was also unable to be present and her paper was read by proxy. Mrs. Francis of Ventura spoke on opportunities for women in horticulture. Her address will be given at some length in a later issue. Mrs. Emily Hoppins' paper, "How Can a City Woman Make a Living in the Country," was the same as given at the June meeting at Davis, and our readers will remember enjoying it in the Cultivators of June 25 and July 2. Miss Ednah Rich of the State Normal School at Santa Barbara spoke on home economics for the woman in the country home. Short extracts from her address and that of Mrs. Neilsen are given below.

Home Economics

Notes from Miss Rich's address:

The economics of right living is what we all need to know. There is a broad paved highway to this knowledge and there is a street full of chuck holes. Most women go into home economics the longest way around. It has been said that the longest way around is the shortest way home but there are times when the longest way around is a round of experience which is not best or wise. I do not agree with the people who say that experience is the best teacher and then point to a garbage can full of wasted material. We must know how to do things.

Everything we do must have an object. We must have as that object one great big thought, and that thought is economics. Wasted energy comes through not knowing how to place things in the house in the right position. Perhaps you think because you have someone to do things for you it doesn't matter. Have you ever thought that the maid servant is a person like yourself? Have you ever thought that if you make things easier for her she will give better service? I wonder how many of you have fireless cookers? The particular kind you buy depends upon yourself. It may be a home-made affair, consisting of a cracker box filled with excelsior or hay, or it may be an electric one, but a fireless cooker you must have. Then will you put it on the floor so you must stoop every time you use it? I heard one woman remark: "I always mean to ask my husband to have the carpenter make a rack to put it on." Why not make it yourself? At least you can get a cracker box from the grocer. You say it is unpainted and would not look well? Why not paint it? These are the things where you can use your ingenuity and your wit.

You carry things all the way from the kitchen to the dining room because you have always done it that way. Why not put castors on the kitchen table and wheel it? Most kitchen sinks and washbowls are built 29 or 30 inches high. For the woman of ordinary height they should be 34 inches.

Make things as sanitary as possible by the use of paint. The waterproof paints and varnishes are splendid and make it possible to wash off the walls just the same as an enamelled surface.

Another thing we need to learn—and that is not to clutter up the house with useless ornaments.

I am not advertising any particular brand but I have learned that the portable vacuum cleaner earns its board and keep quickly. It will clean mattresses, walls, rugs and numberless other things.

The women of the state of California today have at their command the home economics department of the United States department of agriculture, of the college of agriculture of the university of California, and the state normal school at Santa Barbara. They may obtain bulletins on nutrition, bread making, jelly making, in fact, on almost any subject you can think of. At the normal we have a course in institutional management where you and your daughter may come, regardless of previous education.

The state protects you against impure food products. You can learn to test your coffee, tea, baking powder, extracts, etc. If you are in doubt about the quality of a certain brand of canned goods you may send it to the pure food commission at Sacramento and if it fails to come up to the required standard the manufacturer may be enjoined from again putting it on the market.

Some of the larger department stores of the country employ experts to give advice to customers in regard to textiles. Manufacturers are stamping ready-made clothes so we may know just what we are buying.

I often hear women remark: "I am not cultured, I am not musical, I can not paint, I can only keep house." They do not realize that "just keeping house" is one of the grandest things in the world and the woman who lives in the country is the most privileged of all the people in the world.

Jelly Making

Cultivator readers will remember

Style, refinement, service, comfort and wear are represented to the utmost degree in our fine shoes for ladies.

Mayer
HONORBILT SHOES

No matter how much more than our price you are willing to pay, better material and workmanship positively can not be secured. We buy the market's best of both—try them.

WARNING—Always look for the Mayer name and trade mark on the sole. If your dealer cannot supply you, write to us.

MILWAUKEE Mayer CUSTOM MADE HONORBILT

We make Mayer Honorbilt Shoes in all styles for men, women and children; *Drysox*, wet weather shoes; *Yerma Cushion Shoes, Martha Washington Comfort Shoes.*

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Buy Guaranteed Groceries For Less Money

If you are still buying your groceries the old way, we ask you to send us at least a request for our wholesale price list and thus prove to yourself that you can buy guaranteed groceries for less money.

Wholesale price list free on request.

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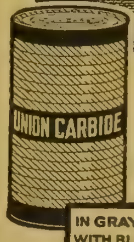

HOME MADE ACETYLENE *Is not poisonous to breathe*

IN GRAY DRUMS WITH BLUE BANDS

The home paper will print your obituary in the next issue—if you ever "blow out the gas" when you visit your cousin in the city. But when your city cousin comes to your country home, he can blow out your acetylene gas light and it won't hurt him a bit to breathe it all night.

Your HOME-MADE ACETYLENE gas is much the best in many other respects. A hundred cubic feet of it will give you more light for your house and barn than a thousand feet of your cousin's city gas. Your light will also be far more brilliant and beautiful, and your acetylene cooking range will have every feature of the finest gas range used by the cities' millions.

To make acetylene for country home use you require an automatic generator. You simply feed this generator the gas producing stone, Union Carbide, about once a month — the machine does the rest.

The use of HOME MADE ACETYLENE has grown steadily while a hundred other competing light propositions have died by the wayside. Today we supply UNION CARBIDE to over a quarter of a million country home families.

Modern acetylene generators are wonderful improvements over the earlier kinds with which you may have been familiar. We will be very glad indeed to have you ask us any question that may come to your mind.

You will find our advertising literature intensely interesting. Address

Union Carbide Sales Company, *Dept.* 7
42nd St. Building, NEW YORK, or Peoples Gas Bldg. CHICAGO, ILL.

Alfalfa Hay
BEET PULP, ALFALFA MEAL
Special Price in Car Lots
Nicholls-Loomis Co.
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Warm the bath room

with the glowing heat of the

PERFECTION OIL HEATER

Mother and children need it for the bath—father for his morning shave.

Dealers everywhere

Write for booklet, "Warmth in Cold Corners."

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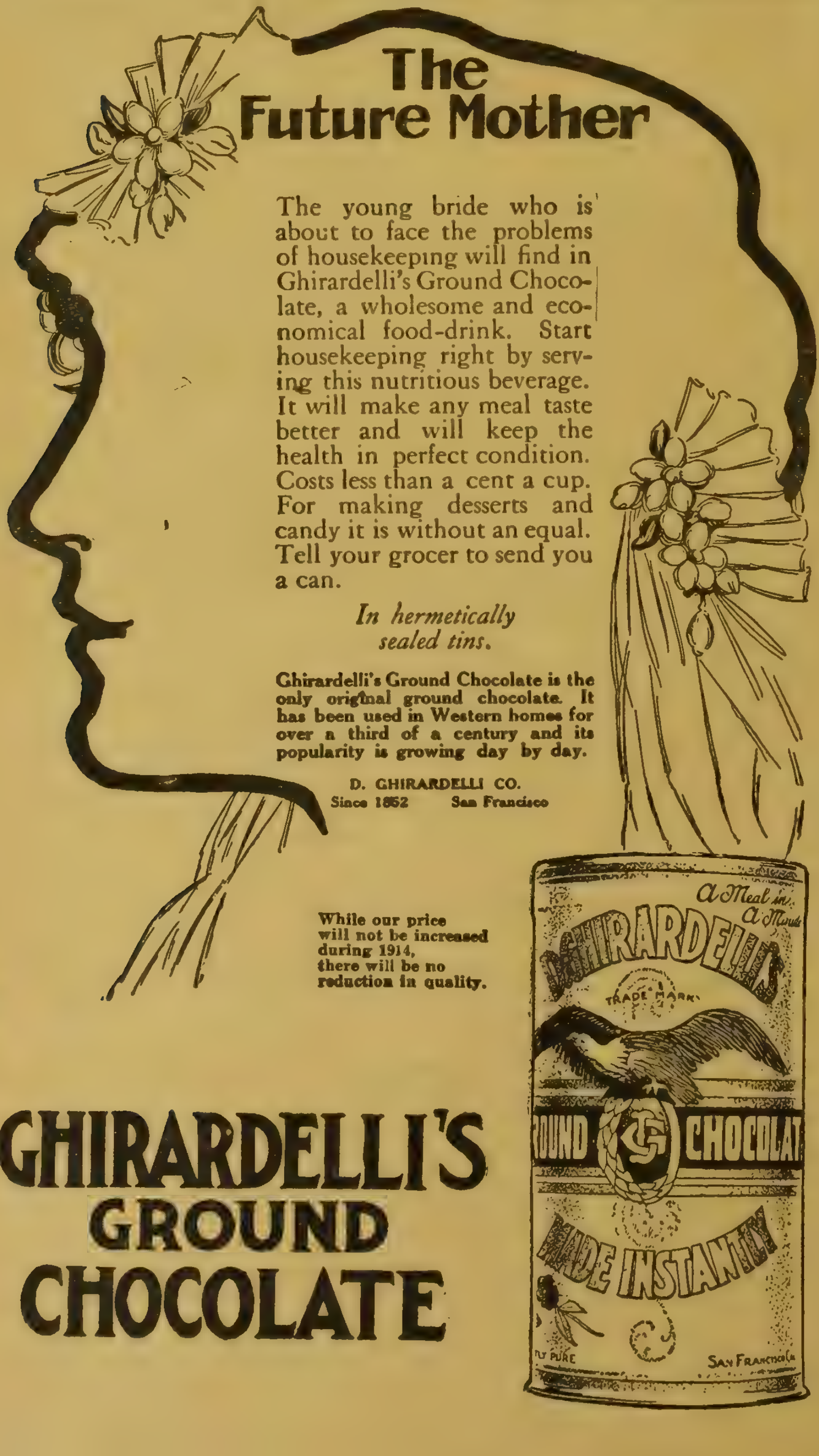
For Best Results Use Pearl Oil



The Future Mother

The young bride who is about to face the problems of housekeeping will find in Ghirardelli's Ground Chocolate, a wholesome and economical food-drink. Start housekeeping right by serving this nutritious beverage. It will make any meal taste better and will keep the health in perfect condition. Costs less than a cent a cup. For making desserts and candy it is without an equal. Tell your grocer to send you a can.

In hermetically sealed tins.

Ghirardelli's Ground Chocolate is the only original ground chocolate. It has been used in Western homes for over a third of a century and its popularity is growing day by day.

D. GHIRARDELLI CO.
Since 1852 San Francisco

While our price will not be increased during 1914, there will be no reduction in quality.

GHIRARDELLI'S GROUND CHOCOLATE

Mrs. Neilsen's article on how she came to take up jelly making as a business and her methods which have led to success. This was published in the California Cultivator of July 30 this year and was delivered at the women's sessions at the State Fruit Growers' Convention at Davis in June.

We will give here only a few notes taken at the Los Angeles meetings.

The question is often asked: "What can a woman do on a farm?" I think this might be answered by the question, "What can a woman not do on the farm?" There is handly any department of farm work in California in which some woman has not made a success and, in most cases, for the reason that the work has been forced upon her, and it was not until then that she realized her capabilities.

My first market was in San Francisco, but my first satisfied customers have been my best advertisements, and now orders have come to me from three states as well as Hawaii. Requests come in for jams and canned fruit as well as my jellies. I no longer seek my market—for the market has come to me—because my products represent my very best quality.

Let me whisper it to other rural women—the markets are not as easily found as one may think, but persevere, think and try every possible market and finally you will be surprised at how many openings you have found. But remember always that a satisfied customer is the best possible advertisement.

I have found my market in orders from lodges, high class hotels and clubs, mining camps and people living in the cities.

I might add that requests have come from my city customers for dressed fowls, as well as fresh ranch eggs. It seems to me that the market is unlimited, that in supplying the various ranch products, a new industry is open to the rural women of today.

Send for Farmers' Bulletin No. 203 by Maria Parloa on "Canned Fruits, Preserves and Jellies" and that will tell you all about it. Write to your representative or senator and he will have it forwarded.

Have a press for extracting juice, no matter if you make only a few glasses; you get all the juice and it is clearer. Jelly presses may be bought from $4.50 up. These can be screwed on the kitchen table. I use a cider press in the yard.

When juice has been pressed out I pour into a jelly bag made of two thicknesses of flannel of the 25-cent quality. To hold the bag in place I have a shelf over my sink. Into this is screwed a stout hook which holds the bag. If I could not have a shelf I would put in a bracket to hold the hook. It pays tö have the bag suspended over the sink to save work and make work easy.

In making exhibition jelly I put the juice through eight bags in order to have it as clear as possible, and in the eighth bag I find little particles of pulp. This very clear jelly is not a bit better tasting than the commercial jelly, but it is clearer. Another hint for exhibition jelly. Buy perfectly clear glasses. The clearest jelly in an imperfect glass will not attract the judge's eye.

In making all jellies I use a pound of sugar for a pound of juice. Do not put sugar in until juice is entirely cold, if you want clear jelly. (See "Use of Syrup Gauge" below for making sure you have added the right proportion of sugar.) Stir well and put on stove with not too hot fire, also to keep the jelly clear. Let come to boil slowly, set on back of stove and skim. Repeat this three times (bringing to boiling point slowly, setting off fire and skimming). Then put back on fire and boil as much as it needs.

Use the syrup gauge. Small size can be purchased for 50 cents and the glass cylinder for holding test liquid for 35 cents. These can be secured at any store handling laboratory supplies. The gauge and cylinder are made of good glass and should not break in use. They should, however, be heated gradually. (For use of syrup gauge see quotation from Bulletin 203 above referred to, at end of this article.)

When juice is nearing the jellying stage, again test with the hydrometer (syrup gauge). Take juice from fire, fill cylinder and test with gauge as directed before when sugar was added. When it registers 29 degrees (on the small Baume gauge) it is exactly at the jellying point and should be pooured into glasses immediately. In a half minute it may be 29¼ degrees and your jelly will be too hard; 29 degrees is just exactly right.

Strawberries will jelly perfectly if used very fresh and just a little green. If not in this condition add a little apple or lemon juice.

Cane Sugar—Beet Sugar

I have always used cane sugar, but this summer I made up my mind to try an experiment. I sent my husband to town to get beet sugar; none of the stores carried it because women would not buy it; they said it would not do for canning or jelly making. There was no beet sugar to be had in adpoining towns, so finally I had to send to Oxnard to the sugar factory. I made some jam with cane sugar and some with beet sugar and labeled them; that is the only way I can tell which was made with cane and which with beet. I made another lot and it was mixed before I had labeled it, and now there is no possible means of telling which is which. Chemists have told us that there was absolutely no difference; they can't tell the difference; do you think the housewife can?

USE OF THE SYRUP GAUGE

The syrup gauge is a graduated glass tube, with a weighted bulb, that registers from zero degrees to 50 degrees, and that is employed to determine the quantity of sugar contained in a syrup.

If this gauge is placed in pure water the bulb will rest on the bottom of the cylinder or other container. If sugar be dissolved in the water the gauge will begin to float. The more sugar there is dissolved in the water the higher the gauge will rise. In making tests it is essential that the syrup should be deep enough to reach the zero point of the gauge. If a glass cylinder holding about half a gill is filled to about two-thirds its height, and the gauge is then placed in the cylinder, the quantity of sugar in the syrup will be registered on the gauge.

Experiments have demonstrated that when sugar is dissolved and heated in fruit juice, if the syrup gauge registers 25 degrees the proportion of sugar is exactly right for combining with the pectin bodies to make jelly. The syrup gauge and the glass cylinder must both be heated gradually that the hot syrup may not break them. If the gauge registers more than 25 degrees, add a little more fruit juice. If, on the other hand, it registers less than 25 degrees, add more sugar. In making syrups for canning and preserving fruits, the exact amount of sugar in a syrup may be ascertained at any stage of boiling, and the syrup be made heavier by adding sugar, or lighter by adding water, as the case demands.—Farmers' Bulletin 230.

THE SHORTEST CUT TO THE BEST RESULT

The shortest cut to the best result—that is what we want these days in every department of life—in home economics more than all.

Did you note the first paragraph in Miss Rich's talk to farm women on this page? She says:

"The economics of right living is what we all need to know. There is a broad paved highway to this knowledge and there is a street full of chuck holes. . . . There are times when the longest way around is a round of experience which is not best or wise. I do not agree with people who say that experience is the best teacher and then point to a garbage can full of wasted material. We must know how to do things."

The short cut on the broad highway to good meals prepared economically (in labor as well as money) is clearly mapped out in "Lessons in Cooking Through Preparation of Meals." Published by the American School of Home Economics of Chicago. You may secure this through the Cultivator Publishing Company for $2.00, postpage prepaid, or in combination with the Cultivator for $2.85.

Two dollars may seem too much to pay for a cook book, but not for this one; it is like no cook book you ever saw before. The publisher says: "The problem of home cooking is not only how to cook various separate dishes but how to prepare whole meals. This book gives a systematic course in cooking through a series of graded menus, with detailed directions not only for cooking the separate dishes but also for preparing and serving each meal as a whole.

The book is divided into 12 chapters, each devoted to one month of the year, beginning with September. First are given tables of weights and measures, equivalents of pounds, cups, tablespoons, etc., cooking time tables, thickening agents, leavening agents, shortening, flavoring, arrangement of kitchen, setting the table, etc. Then beginning with Monday's breakfast menus are given for each meal for a week with recipes for every dish used and very complete directions as to how to proceed with least waste of time, effort and food materials. Then are given pages of helpful suggestions, followed by table showing detailed cost of food and food values for each day and suggestions for reducing the cost of menus.

The same plan is followed in each of the 12 parts. As samples of the rest of the book we give outline of January and July menus:

January Menus: Fuels and Fuel Economy, Coal, Coke, Wood, Gas, Gasoline, Kerosene, Alcohol, Electricity, Reading Gas and Electric Meters; Informal Luncheon Menu, Recipes, Table Decoration and Method of Serving; Fireless Cookers and Their Use; Cost of Food and Food Value; Reducing the Cost.

July Menus: Pickling Fruits and Vegetables; Canning Vegetables, Recipes; Picnic Dinner Menu, Suggestions for Packing, etc.; Children's Party Menu, Recipes, Table Decoration, Methods for Serving; Cost of Food and Food Value; Reducing the Cost.

Also we quote directions for one Saturday morning baking:

Yeast Bread—Short Process.—Scald 1 c milk, add 1 c boiling water, pour into a large mixing bowl or bread riser, add 2 T lard, 2 t salt and 1 T sugar. When lukewarm, add 1 cake of compressed yeast which has been softened in ¼ c lukewarm water, mix well and sift in 6 c bread flour. Beat well with a spoon and add sufficient flour to make a dough which can be handled. Turn on to a floured board and knead thoroughly. Let rise in the mixing bowl till double its bulk, knead, form into loaves, place in greased baking pans, let rise till double its bulk, and bake in a moderate oven about 1 hour until the loaves shrink away from the pan. For further directions see article on Bread Making, page 211.

Pound Cake.—Cream ½ pound butter, add gradually ½ pound or 1 c of sugar, and beat well; add the yolks of 5 eggs beaten uuntil thick and lemon colored, whites of 5 eggs beaten until stiff and dry, ½ pound or 2 c of pastry flour, ¼ t mace and ½ T vanilla. Beat vigorously 5 m. Bake in a deep pan 1 h in a slow oven; or 30 to 35 m if baked as small fancy cakes.

Fig Turnovers.—Mix and sift 2 c flour, ¾ t salt and 4 t baking powder. Rub 1½ T butter into the flour; then beat 1 egg, add to it 1 c milk, mix and add gradually to the flour. The dough should be soft but not wet. Turn out quickly onto a floured board, roll into a sheet ½ inch thick and cut into rounds with a biscuit cutter. Dip a knife handle into flour, press down in the center of each biscuit, making a sort of hinge; have ready 8 or 10 figs chopped fine. Put 1 T of the fig mixture on half of the roll, brush over lightly with white of egg, fold over the other half, pressing the edges well together. Bake in a quick oven 20 m. Serve warm with cream and sugar.

Jellied Veal.—Cover a knuckle of veal broken into small pieces with boiling water and let simmer until tender, together with a few slices of carrot, half an onion and a stalk of celery. Drain, reserving the broth; remove all meat from the bones, return the particles of gristle, skin and bones to the broth, put over the fire and simmer until reduced to 1 c. Strain, set aside and cool. When the meat is nearly cold cut in cubes or chop fine, remove the fát from the broth, reheat and stir the veal into it, adding salt, pepper and any other seasoning desired. Decorate a mould with slices of hard-cooked eggs, pour the veal mixture into this, cover with buttered paper, press down with a weight and let stand until cold and set. Serve sliced thin.

Method of Work.—Start the bread the first thing after breakfast. Then put the veal on to cook and make the pound cake; while baking, make the fig turnovers for luncheon. Knead the bread and set it to rise. Then, if necessary, make a supply of salad dressing, following directions given on page 29. Knead the bread a second time, if desired, shaping loaves, let rise and bake.

Abbreviations: Teaspoon t, tablespoon T, cup c, minute m, hour h.

If your daughter is starting to make a home of her own no one thing could give to her the ever-present help contained in this one volume. No Christmas gift would be more appreciated by any housekeeper.

IDEAS FOR THE COOK

Written for California Cultivator

By Isabel Cottle

Dinner

Broiled Mackerel
Cream and Butter Dressing
Baked Potatoes
Banana Fritters Coffee

Lunch or Supper

Cream of Onion Soup
Stuffed Egg Plant
Hot Cheese Sandwiches
Lettuce and Apple Salad, French Dressing
Cranberry Pie Tea

Dinner

Viennese Chicken, Browned Riced Potatoes
Creamed Brussels Sprouts
Sliced Tomatoes
Sponge Cake Coffee

Cream of Onion Soup

Melt one-fouth cup of butter, add a pint of sliced onions and cook slowly for 15 minutes, closely covered to prevent browning. Add three cups of water, salt and pepper, and a bit of parsley. Let this simmer for three-fourths of an hour, then rub through a sieve. Have in readiness three cups of milk in which a bay leaf and bit of mace have been slowly heated, thicken with a scant tablespoon cornstarch. When thoroughly cooked strain the last mixture into the puree, stir well and serve with grated cheese, a tablespoon for each service.

Viennese Chicken

Clean and cut a fat fowl into pieces as for frying. Simmer with a bay leaf, parsley, a little lemon juice and seasoning until tender and let cool in the stock. Drain well. Egg and crumb each piece as for croquettes and fry in deep fat. Serve with sauce made from thickened stock, chopped mushrooms and parsley.

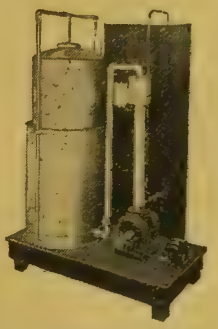
Cranberry Pie

One cup cranberries, cut in halves. One cup sugar mixed with 1 heaping tablespoon flour; one-half cup cold water and a little butter. Bake in one crust, with strips across top.

Sponge Cake

Four eggs, one cupful of sugar and one cupful of flour are all this cake requires. It is all in the putting together and the baking. Beat the whites very dry and fold in the sugar, one-quarter of a cupful at a time. Add the yolks of the eggs, one at a time,

(Continued on Page 543.)



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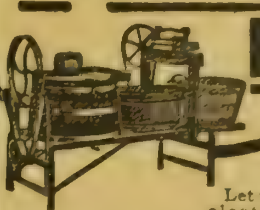

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San Francisco-Los Angeles Produce Markets

Los Angeles Market

LOS ANGELES, Nov. 24, 1914.

The prices given below, except where otherwise noted, are those made by wholesale or commission houses to retailers, and are intended to give producers the range of the market rather than an indication of prices which they will secure. Jobbers' quotations to producers are not given.

BUTTER

Butter remains practically at a standstill though lower grades show slight advance. Receipts are only about 30,000 pounds daily.

Prices to trade 4 cents above following quotations:

Creamery Extras	36
Firsts	34
Country	28
Ladle	27

CHEESE

Prices to trade, 1 and 2 cents higher:

California Fresh	15@15½
Domestic Swiss	20@21
Imported Swiss	36@38
Eastern Daisy	18½
Longhorn	18½@19
Oregon Triplets	17½

EGGS AND POULTRY

Receipts of eggs are light and a material advance is quoted on all grades. Market firm.

Prices to trade, 3 cents higher than following quotations:

Fresh ranch, case counts	46
Candled	50
Northern Case Count	49
Petaluma-Santa Rosa	50

Prices to producers:

Hens, lb.	15@18
Roosters, old	9
Broilers, lb.	24
Fryers	20
Roasters, lb.	15
Turkeys	18@20
Ducks	17
Geese	14
Squabs, doz.	2.00

LIVE STOCK

The following quotations are f. o. b. Los Angeles on all stock:

Hogs, 175 to 200 lbs., per cwt.	8.00
Prime Steers	7¼@7½
Heifers	6¼@6½
Calves, lb.	8½@9
Sheep—	
Ewes, head	4.50
Wethers	4.50@5.00
Lambs, head	4.50@4.75

POTATOES

Wholesale selling price:

Idaho	1.20@1.25
Sweets, lug	75@85
Northern Burbanks, cwt.	1.20@1.30
Salinas	1.90@2.00
Shimas	1.30@1.40
Lompocs	1.90@2 00

ONIONS

Wholesale selling price:

Australian Brown, cwt.	90@95
Silverskins, cwt.	1.85@2.00
White Globe	2.00@2.15
Yellow Danvers	90@95
Garlic	16@17

VEGETABLES

Wholesale selling price:

Artichokes, Northern, doz.	50@90
Beets, doz.	30@35
Beans, String	5@7
Lima	5@6
Cabbage	65@75
Carrots, doz.	30@35
Cauliflower, doz.	70@80
Celery, crate	1.70@2.35
Corn, Sugar, box	60@65
Cucumbers, lug	1.00@1.25
Egg Plant	4@5
Escarole, doz.	40
Horseradish, lb.	15@16
Leeks, doz.	35@40
Lettuce, crate	90@1.10
Mint, doz.	35@40
Parsnips, doz.	25@30
Okra, lb.	9@10
Onions, Green, doz. bunches	15@20
Oyster Plant	30@35
Parsnips, doz.	25@30
Peas, lb.	6@8
Peppers—	
Bell, lb.	3@4
Chili, lb.	3@4
Pumpkins, lb.	1½@2
Radish, doz.	20@30
Rhubarb, box	80@85
Spinach, doz.	20
Squash—	
Summer, lug	60@75
Crookneck	30@40
Hubbard, lb.	1¼@1½
Turnips	30@35
Tomatoes, lug	60@80

FRESH FRUIT

Wholesale selling price:

Apples—	
Bellflowers	70@90
Jonathans	1.25@1.35
Spitzenbergs	1.25@1.35
Rome Beauty	1.35@1.50
Pearmains	75@90
Bananas	3½@4
Berries—	
Strawberries, basket	7@9
Blackberries, basket	5@6
Casabas, doz.	1.35@1.50
Cranberries, bbl.	7.75@9.00
Figs, box	2.00@2.25
Grapes—	
Black Moroccos	1.10@1.25
Cornichon	1.10@1.25
Malagas, crate	1.20@1.25
Muscatels, lug	1.10@1.25
Tokays, lug	1.35@1.50
Red Emperors	1.35
Guavas, basket	3@4
Pears, Barlett, lb.	7@8
Seckel, lug	1.30
Winter Nelis, packed	2.25
Flemish Beauty	1.80@1.90
Persimmons, lb.	3@7
Pineapples, lb.	6@6½
Pomegranates, box	1.50
Watermelons, lb.	1½@2

CITRUS FRUIT

Wholesale selling price:

Lemons	2.25@2.35
Grapefruit, Seedless	2.20@2.35
Navels	2.45@2.65
Valencias	2.75@3.00
Limes, basket	75@1.00

DRIED FRUITS

Wholesale prices to retailers are:

Evaporated Apples, Fancy., lb. boxes	6¼@7½
Apricots	8½@10
Nectarines	12½
Peaches	5½@6
Pears	8@12
Prunes	5¾@17
Plums	10

NUTS

Prices named by California Walnut Growers' Association are:

No. 1	16½
Budded Walnuts	20
Jumbos	19
No. 2	12
Culls	9

Prices fixed by California Almond Growers' Exchange, f. o. b. California.

Almonds—	
Nonpareil	21
I X L	20
N P U	19
Drake's Thinshell	15
Pecans	17
Peanuts—	
California, Raw	6
Japan	7½
Eastern	7½
Rice Corn	5.00@5.25

HONEY

Wholesale selling price:

Comb, Fancy, Water White	14
White	12
Light Amber	11
Extr. Water White	7
White	6
Light Amber	5½
Beeswax	32

RICE

Wholesale selling price:

California	5.00
Broken	3.50@3.75

BEANS

Wholesale selling price:

Producer's price not far from one dollar under these quotations:

Lady Washington	4.85@5.10
Pinks	4.15@4.25
Black Eyes	4.90@5.25
Lentils	8.00@9.00
Navy	5.25@5.35
Small White	4.90@5.00
Garbanzos	6.00@7.50

HAY

Hay still remains stationary but unless rains come soon a material advance will be made.

Buying prices f. o. b. cars Los Angeles:

Barley	10.00@11.00
Wheat Hay	10.00@11.00
Tame Oat	11.00@13.00
Alfalfa	9.00@11.00

GRAIN

Wholesale selling prices f. o. b. Los Angeles:

Corn, Yellow	2.20
Corn, White	2.30
Wheat	2.15
Oats, Red	1.85
Oats, White	1.65
Kaffir Corn	1.90
Millet	3.75
Popcorn	4.75@5.00
Egyptian Corn	2.05
Barley Seed	1.45
Milo Maize	2.00
Cal. Seed Oats	2.25
Sunflower Seed	5.25@5.35

FEED STUFF

Wholesale selling prices f. o. b. Los Angeles:

Bran, Heavy	1.55
Alfalfa Meal	1.06
Alfalfa Syrup, per cwt.	1.05
Beef Scraps	3.00@3.10
Beet Pulp	1.25
Cracked Corn, cwt.	2.25
Cracked Wheat, cwt.	2.30
Cotton Seed Meal	1.85
Bloodmeal	3.60@3.70
Bone Meal	2.00
Meat Meal	3.00
Bone Green	1.95@2.05
Charcoal	1.90@2.00
Oil Cake Meal	2.05
Fish Meal	3.15@3.25
Rolled Oats	1.90
Rolled Barley	1.35
Middlings	1.85
Feed Meal	2.30
Oat and Wheat Middlings	1.60

San Francisco Market

SAN FRANCISCO, Nov. 23, 1914.

The prices given below, except where otherwise noted, are those made by wholesale or commission houses to retailers, and are intended to give producers the range of the market rather than an indication of prices which they will secure. Jobbers' quotations to producers are not given.

BUTTER

Prices to trade, 4 cents above following quotations:

Fancy Creamery	33
Prime Firsts	28
Firsts	26
Seconds	28

CHEESE

Wholesaler to retailer.

Oregon Y. Am.	16
Young America	15½@16
California Flats	10@16
Cheddar	20
Oregon Twins	14½

EGGS AND POULTRY

Prices to trade 3 cents higher than following quotations:

Extras	50
Select Pullets	37
Storage Extras	37

Price to producer:

Hens	15@18
Fryers	19@20
Roosters, old	12
Roosters, young	16@17
Broilers	17@18
Geese	2.00@3.00
Squabs	2.50@3.00
Belgian Hares, lb.	9@10
Turkeys	17@21

LIVE STOCK

San Francisco prices, gross weight:

Steers	4@7¼
Cows and Heifers	3@6¼
Calves, lb., live weight	6@9½
Hogs	5@7¾
Wethers	6@6¼
Ewes	5¼@5¾
Milk Lambs	7@7½

POTATOES

Wholesale selling price:

Alvarados	1.15@1.30
Delta, Burbanks	50@1.00
Salinas Burbanks	1.40@1.50
Sweets, cwt.	1.40@1.65

ONIONS

Wholesale selling price:

Yellow, sack	55@65
Garlic, new	10@15

VEGETABLES

Wholesale selling price:

Beans—	
Wax	7@10
Strings	5@8
Limas, lb.	5@8
Brussels Sprouts, lb.	2@3½
Cabbage, cwt.	1.00@1.25
Carrots, sack	30@40
Celery, doz.	20@25
Corn, Green, sack	1.00@1.25
Cucumbers, lug	35@40
Egg Plant, lug	25@35
Lettuce, crate	75@1.50
Peppers—	
Bell, lug	35@40
Chili, lug	30@40
[illegible]	
Tomatoes, lug	30@50

FRESH FRUIT

Apples—	
Bellflowers	30@60
Spitzenbergs	50@90
Jonathan	40@75
White Winter Pearmains	50@65
Newtown Pippins	40@75
Bananas, Hawaiian, bunch	1.25@2.00
Cranberries, bbl.	8.00@8.25
Figs—	
Black, double layer	1.00@1.15
Black	50@75
Grapes, crate	40@65
Huckleberries	5@7
Pears—	
Winter Nelis, wrapped, box	1.25@1.50
Other varieties	35@75
Pomegranates, box	50@1.00
Pineapples	2.75@3.25
Persimmons	50@90
Prunes, crate	60@1.00
Quinces, box	25@40

CITRUS FRUIT

Wholesale selling price:

Grapefruit, Seedless	1.75@2.50
New crop	2.00@2.75
Lemons	1.75@4.00
Lemonettes	1.00@2.00
Limes, case	3.00@5.00
Valencias	2.00@3.00

NUTS

ALMONDS—Prices fixed by Almond Growers' Exchange to the trade, f. o. b. California:

Nonpareil	21
I X L	20
Ne Plus Ultra	19
Drakes	16

Wholesale selling price:

Peanuts—	
Unpolished	5@8
Polished	6@6½
Japanese, Shelled	6¼@6¾
Italian Chestnuts	6½@7

BEANS

Wholesale selling price:

Limas	5.40@5.50
Lady Washington	3.60@3.75
Pink	3.45@3.55
Black Eyes	4.10@4.30
Cranberry	3.80@4.00
Small White	4.40@4.50
Garbanzos	5.50@6.00
Large White	4.25@4.35
Bayou	4.70@4.80
Manchurian Speckled Bayous	3.50@3.75
Manchurian Butters	3.90@4.10
Manchurian Cranberry	4.00@4.25
Bayous, California	3.50@3.75
Red Mexican	5.40@5.50
Red Kidney	5.50
Horse Beans	3.00@4.00
Bayou, Mexican	4.00@4.25

HONEY

Comb, Water White	14@16
Amber	10@12
Dark	7@10
Extracted White	7@9
Light Amber	6½
Dark	4@5½
Beeswax	27@32

HOPS

1914

Sacramento Valley	8@10
Sonoma-Mendocino	9½@11
Oregon Clusters	9½@11

HAY

Under date of Nov. 21 Scott, Magner & Miller say:

Receipts of hay for the past week were 1681 tons, quite a decrease from the previous week of 2771 tons. Practically the entire receipts continue to be of the medium and poorer grades. Fancy hay of any description sells out of proportion to all other grades whenever received, but is very scarce. Most of the shipments are from the warehouses; the fields being practically cleared with the exception of where hay has been piled up and covered over with the intention of carrying it until spring. Plowing is going on in all districts where dry plowing can be done. Other sections are awaiting the rains, which are quite late but no doubt will come along in due time. Some hay is moving for export right along, although not in any large quantities with the exception of 1000 tons which were shipped during the week to the Philippines for government account.

Arrivals of alfalfa have been quite heavy. Straw is normal. We quote wholesale prices in carload lots as appear from dealers' transfers upon the hay market. For prices to consumers, charges of cartage, commission and handling expenses must be added according to conditions.

We quote the average wholesale prices on carload lots on today's market as follows:

Fancy Wheat Hay, lt. bales	12.00@13.00
No. 1 Wheat or Wheat and Oat	9.00@11.00
No. 2 Wheat or Wheat and Oat	6.00@8.50
Choice Tame Oat	10.50@12.00
Other Tame Oat	6.00@9.00
Wheat, Cal. Club	1.95@2.00
Barley	5.00@7.50
Wild Oat	6.00@8.00
Alfalfa	6.00@9.00

WEATHER CONDITIONS

For Week Ending November 21, 1914.

Report from the various stations of the U. S. Weather Bureau, by Geo. H. Wilson, director, San Francisco:

	Rainfall Data			Temperature Data	
	Past Week.	Seasonal to Date.	Normal to Date.	Maximum.	Minimum.
Eureka	T	6.87	7.31	66	38
Red Bluff	00	1.57	4.37	74	36
Sacramento	00	1.08	2.77	70	38
San Francisco	00	.48	3.09	72	48
San Jose	00	.98	2.38	74	32
Fresno	00	.58	1.70	74	38
Independence	00	.40	1.57	66	26
San Luis Obispo	00	.20	2.85	88	40
Los Angeles	00	.49	1.75	86	52
San Diego	00	1.90	1.07	86	50

T means trace.

Stock Hay	4.50@5.00
Straw	30@45

GRAIN

Alfalfa Seed	14@16
Wheat, Cal. Club	1.95@2.00
Corn, Eastern Yellow, blk	1.75@1.77½
Corn, Egyptian White	1.40@1.60
Barley, Feed	1.20@1.22½
Oats, White	1.55@1.60
Oats Seed	1.40@1.60
Oats, Red, Feed	1.30@1.40
Millet	3@3¾
Flax	6@6½
Rye	1.60@[illegible]
Sunflower	5@5½

FEED STUFF

Alfalfa Meal, car lots	12.50@13.50
Bran, ton	25.50@26.50
Feed Cornmeal, ton	40.00@41.00
Cracked Corn	40.00@41.00
Rolled Barley, ton	25.00@26.00
Rolled Oats, ton	37.00@[illegible]
Middlings	30.50@31.50
Shorts	26.50@27.50
Oilcake Meal	34.00@35.50
Cocoanut Oilcake Meal	23.00@24.00

Tehama County's oranges are ripening fast.

⅛ carat $8.00
¼ carat $17.00
⅜ carat $30.00
½ carat $40.00
⅝ carat $52.50
¾ carat $65.00
⅞ carat $82.50
1 carat $95.00

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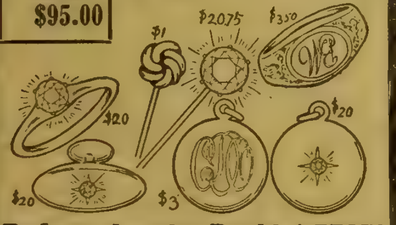

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Los Angeles.

Gentlemen:—
Kindly send me your Free Booklet of Diamonds and Jewelry.

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Address ....
Cult.

Citrus Fruit Market

LOS ANGELES, Nov. 24, 1914.

Central and Northern California are sending out some of the finest fruit ever put on the market; it is coming up to the test recommended by the department of agricultural and has a magnificent appearance. A few points in Southern California have a little fruit which will also stand the test and it is excellent quality, but in general the southern end of the state will do but little shipping for a month yet. Tulare County shipments are now going forward at the rate of about 100 carloads a day and will probably increase for a few weeks.

Lemons are going forward at the rate of about 15 or 20 carloads daily and are being well received the country over, though owing to quality prices are declining and at present $2.75 to $3.00 is about the limit for good fruit.

Shipments

Shipments of oranges to date from Southern California since Nov. 1, 251; lemons, 217; total, 468. To same date last season, oranges, 13; lemons, 53; total, 66. From Tulare County to and including Nov. 20, oranges, 153; lemons, 42; total, 195. From Butte County to Nov. 20, oranges, 34 cars.

CLTIVATOR MARKETS ONE

NEW YORK, November 23.—Ten cars Valencias, two cars lemons sold. Market strong, higher on Valencias, steady on lemons. Weather fair.

VALENCIAS—	Avke.
Old Mission, xf., Chapman	$5.95
Old Mission, fy., Chapman	5.25
Golden Eagle, Chapman	4.60
Orchard, National O. Co.	3.80
Standard, National O. Co.	2.70
Wm. Tell. Or. Ex.	5.00
Golden Beaver, Or. Ex.	4.10
Scepter, Or. Ex.	5.85
Rooster, Or. Ex.	4.80
Stag, A. G. G. Ex.	4.65
Blue Crusader	5.55
Pointer, A. C. G. Ex.	3.25
Alphabetical, Or. V. Park	5.25
Ticktock, Or. V. Park	4.50
Pointer, A. C. G. Ex.	3.80
Martha Washington, Or. Ex.	4.50
Cowboy, Or. Ex.	3.90
Red C. Covina Ex.	3.25
Cougar, Covina Ex.	2.80
Evolution, A. C. G. Ex.	3.00
LEMONS—	
Whittier, ventilated	$3.25
Pet, ventilated	3.25
Greyhound, ventilated	2.90

ST. LOUIS, Nov. 23.—Cloudy, cool. Market steady on lemons, stronger on oranges. Two cars lemons, one oranges sold.

VALENCIAS—	Avge.
Golden, A. C. G. Azusa	$3.10
Pointer, A. C. G. Azusa	2.75
Hunter, A. C. G. Azusa	2.45
LEMONS—	
Greyhound, S. D. Ex.	$2.40
California, A. C. G. Ex.	.75
Jupiter, Amer. Ft. Dis.	1.25
Mars	1.35
Plain	2.05

PITTSBURGH, Nov. 23.—One car oranges, one car lemons sold. Cold.

VALENCIAS—	Avge.
Victoria, AH. Ex.	$3.90
Golden Glory, Riv. Ex.	3.45
Golden, Riv. Ex.	3.35
LEMONS—	
Purity, Or. Tustin	$3.00
Lemonade	2.50
Lemon Heights	3.45
Hillcrest	3.15
Evergreen	2.70

CLEVELAND, Nov. 23.—Two cars lemons sold. Market declining. Cold. Five cars Florida oranges averaged $1.95.

LEMONS—	
Red Hill, Or. Tustin	$2.70
Purity, Or. Tustin	2.30
Cream, C. M. Brown	2.25
Minnehaha, C. M. Brown	1.45

PHILADELPHIA, Nov. 23.—One car Valencias, one car lemons sold. Market steady. Cold. Twenty-six cars Florida oranges selling late today.

VALENCIAS—	Avge.
Golden Beaver, Or. McPherson	$4.25
Saddleback, Or. McPherson	3.10
LEMONS—	
Hewes Park, Or. El Modena	$2.70
Castellamare	2.15
El Modena	1.55

CINCINNATI, Nov. 23.—Cld. Sold one car lemons, four Florida oranges, four grapefruit. Market steady on lemons and grapefruit, higher on oranges. Florida oranges averaged $2.35; grapefruit $1.70 to $2.30.

LEMONS—	
N.W.B., Loma, V.C. Santa Paula	$2.30

BOSTON, Nov. 23.—Five cars oranges, two cars lemons sold. Clear, cold. Market easier on oranges, stronger on lemons.

VALENCIAS—	Avge.
Alphabetical, Or. V. Park	$4.40
Ticktock, Or. V. Park	4.30
Ibex, S.T. Rivera	4.50
Ranchito, S.T. Rivera	3.50
Arcadia, S.T. Pico	3.75
Burry, Plain Wrap, S.T. Pico	3.55
Carmencito, S.T. Fullerton	4.25
Colombo, S.T. Fullerton	3.65
Colombo	3.45
Las Palmas	3.15
LEMONS—	
Squirrel, A.H. Prenda	$3.40
Prairie Chicken	2.85
Whittier, S.T. Ex., Whittier	3.50
Pico	2.90

CHICAGO, Nov. 23.—Apples, barrels, 1.75@4.00; apples, boxes, 80@1.75. Grapes, basket, 15@21. Lemons, boxes, 2.00@4.75. Quinces, barrels, 3.50@3.75. Pineapples, cases, 2.00@3.75. Oranges, boxes, 1.75@4.50. Pears, one bushel, 50@65. California strawberries, 20@25 per pint.

CURED FRUIT BULLETIN

SAN FRANCISCO, November 2, 1914—Packing and shipping has been keeping everyone busy so the volume of new business has been very small. The trade generally has been buying from hand to mouth, or only for their immediate requirements, so it is reasonable to suppose that they will commence buying earlier than usual this winter.

Although buying has been very light, the market is in a depressed condition. Some difficulty has been experienced in filling prune orders on account of the scarcity of some of the smaller sizes, 60s to 90s being the scarce sizes in most districts, and even with this the prune market has a very easy tone.

It is expected that later England and other foreign countries will be in the market for dried fruit. Up to the present time a great deal of uncertainty has attended shipments to these countries, the great difficulty being the fact that England is trying to keep the smaller neutral countries from allowing shipments to be made through their domains to Germany and you know that Germany has been a very heavy buyer of California fruits, so the loss of her trade makes quite a difference in our home markets as this forces goods that usually would have been sold abroad onto our own markets, so we prefer to keep the fruit in our possession until such time as matters adjust themselves and shipments can be handled with a greater assurance of protection to the shipper.

The quality of apricots differs very materially in the different districts, which accounts for the range in prices. Buyers are showing very little interest in this article, so sales are slow.

We believe that peaches have gone as low as they will go, and the low prices prevailing ought to stimulate consumption. The two grades of this variety which are shortest are fancy and extra fancy.

Packers and buying trade were rather upset when we were advised of the slides which had occured in the Panama canal, as a great deal of fruit was in transit at that time, but the government, which is usually prepared for such emergencies, after a few days announced that the canal was again open for business, but we are liable from time to time to be subject to small delays on account of the magnitude of the work and the possibility of there being some weak spot in the construction.

Raisins are being quoted by some at lower prices than the Associated Raisin Company is making. We believe a little later when the rush is over that the dried fruit market, generally, will settle down, preparatory to the winter trade. We also believe that with the opening of the federal banks we shall see things brighten up, that money conditions will be easier, but the effect will not be felt in buying until after the first of the year. Conditions which exist today have been helped along by the general feeling of pessimism and depression that exists, more than by actual conditions—everyone having made up his mind that times are bad, whether they are or not—so if everyone would look on the bright side of things and make up his mind that things are going to be all right we would soon see a change because the resources of this country are large. But while we have a right to hope let us not deceive ourselves into a belief that the high prices which prevailed for a short time at the opening of our season will return; there is nothing upon which to base that belief, we shall have a market—now, there is none.

It is only a temporary set-back, and business will soon be more flourishing than ever, and is already getting better, and the demand for our products will be much increased, so don't be discouraged—the sun is rising clear and the future will be bright.—California Cured Fruit Exchange.

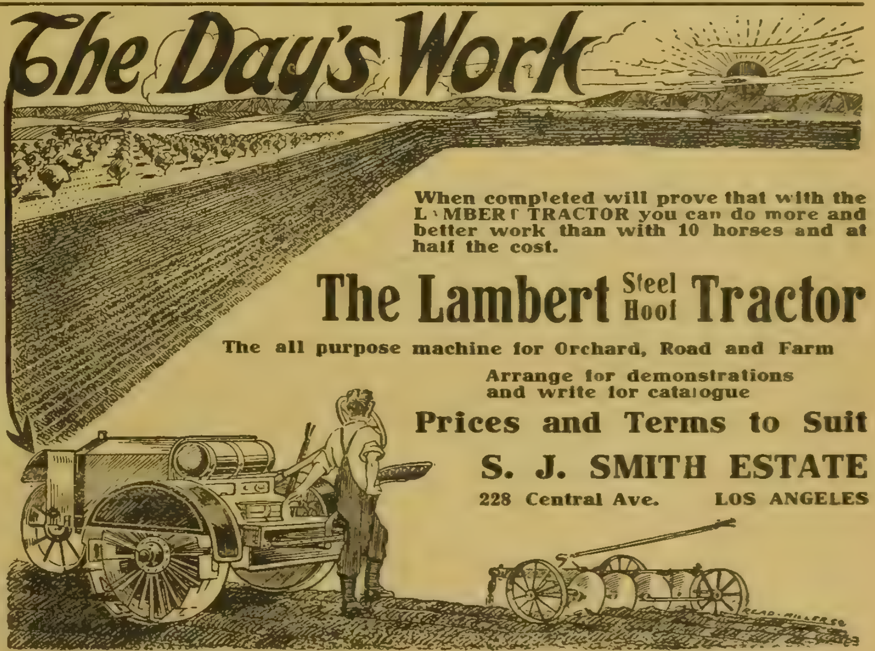
IDEAS FOR THE COOK

(Continued from Page 541)

cutting each in half with the cake beater, and cutting them into the whites and sugar so lightly that it will be streaked with yellow. Cut the flour into the mixture in the same way and put in buttered pan and bake three-quarters of an hour in a very moderate oven. When it is ready for the oven it should show streaks of flour and yolks. Don't be afraid when you see it all streaked. It is all right. If you stir more you will spoil the cake.

SALE OF HOLSTEINS

Geo. A. Smith of Corcoran has made some record in pure bred live stock sales and is ambitious to make Corcoran the greatest sale center in California. His ambition will be realized if he keeps on offering the blood lines which he has in the past. Now comes the finest offering ever with 80 registered Holsteins which will go to the highest bidder at his sale Saturday, December 12. Regarding some of his offerings, Mr. Smith says: King Segis. Hengerveld De Kol 2d's Butter Boy 3d, Sarcastic Lad, Johanna Colantha Lad, Judge Hengerveld De Kol, Pontiac Hengerveld Parthenea, Duchess Ormsby Piebe Burke, Jessie Maida Paul De Kol Burke and other famous sires will be represented by their sons, daughters, grandsons and granddaughters. Sell some of your boarders and get some money makers.



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The Lambert Steel Hoof Tractor

The all purpose machine for Orchard, Road and Farm

Arrange for demonstrations and write for catalogue

Prices and Terms to Suit

S. J. SMITH ESTATE
228 Central Ave. LOS ANGELES

Farm Produce, Eggs and Poultry

We are now located at address below and respectfully solicit consignments of all kinds of farm produce, including eggs and poultry. We guarantee to get the highest market price and remit promptly to shippers. A trial shipment solicited. We work on a commission basis, stating to shippers the amounts we receive for produce. We will give you a square deal. Send on your produce. **FARMERS' UNION, Inc., of Arroyo Grande, Cal.**
C. A. Cheadle. Mgr., Los Angeles Branch, 1235-37 E. 6th St., Los Angeles

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LOS ANGELES, CAL

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When in Los Angeles, stay at Hotel Clark. Ideal location. One-half block from Central Park. Close to all stores. Extremely reasonable rates. 555 rooms with bath. Excellent grill service—popular prices.
Hill Street Between 4th and 5th.

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Wholesale and Retail
Placentia Perfection — Eureka — Franquette — Mayette
GEO. S. WEINSHANK Phone 4551 425 Magnolia Ave. Whittier Cal.

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The Yuba Ball Tread Tractor—bigger profits—the use of one means the realization of the other.

Careful designing, the use of high-grade materials, and accurate construction reduce the cost of maintenance to a minimum.

The Yuba Ball Tread Tractor is built to stay built; every part is able to stand much heavier strains than can possibly be put on it in the course of service; wear on each part is very slight in proportion to the work done; but should it become necessary to replace any part, it can be done at small cost, in the field, by the operator. The elimination of big repair bills and the fact that The Yuba Ball Tread Tractor can be used for hauling, or as an emergency stationary power plant, every day in the year, make it an exceedingly profitable investment.

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As a business precaution you should investigate The Yuba Ball Tread Tractor. This booklet points the way to bigger profits.

For convenience, use the coupon

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Gentlemen: Kindly send me a copy of your booklet "The Yuba Ball Tread Tractor."

Name .... *P. O. Box* ....
Town .... *State* ....
Size of Farm .... *Acres.* *(Check main crop raised.)*
Fruit .... *Rice* ....
Grapes .... *Alfalfa* ....
Grain .... *Hops* ....
Hay ....

CALIFORNIA CULTIVATOR

Rural Californian combined with California Cultivator

An Illustrated Weekly Magazine, Devoted to the Rural Home and Ranch

OS ANGELES December 3, 1914 SAN FRANCISCO

A Fruiting Date Palm

The Coachella Valley is Proving Wonderfully Adapted to the Growing of Dates, as is Proven by the Government Experimental Garden and Many Private Plantings

Courtesy Coachella Valley Submarine.

I Am Positive That These

40 Acre Equipped Farms

Will Prove Immensely Profitable

This photograph shows wheat growing over five feet high. It was taken on a strip of 1200 acres immediately adjoining these FORTY-ACRE EQUIPPED FARMS.

I ADD TO THIS LAND, FOR EVERY PURCHASER, THE SEED AND TREES BEST SUITED TO IT. A SELECTION OF ALMOND, APRICOT, PRUNE, PEACH AND FIG. FOR PLANTING ALONG THE ROADWAY, OLIVE, LEMON, ORANGE AND WALNUT TREES.

MY SPECIAL KNOWLEDGE OF TREES AND THEIR ADAPTABILITY GIVES YOU ASSURANCE THAT THE TREES WILL BE THE BEST POSSIBLE TO SECURE AND THAT THEY WILL BE SUITED TO THE SECTION SELECTED.

I also furnish a complete selection of seeds, including corn, beans, milo, alfalfa, rice and grain. YOU CAN ARRANGE THE ACREAGE FOR EACH ONE AS BEST SUITS YOUR INCLINATIONS. I WILL SUBSTITUTE POULTRY IF YOU DESIRE IT.

In Addition to This I Furnish a Plow, Harrow and Cultivator

And further, I bore you a well and install the pumping plant complete. TURN ON THE SWITCH AND THE WATER WILL FLOW. There is ample water in this section for all purposes and it can be drawn from one well.

THE PRICE. All of this at $150.00 per acre. One quarter down and the balance to suit.

Dudley Moulton.

Formerly Agricultural expert, United States Department of Agriculture and deputy State Commissioner of Horticulture of California.

They are completely equipped farms — Fertile fields that now require only ability and energy to change them into homes and make them bloom into rich harvests.

LOCATION. This choice land is in the Sacramento Valley, not far from the foothills. It is the alluvial land of the high Sierras that Nature has washed down through centuries of time and purified and fertilized with the warm air and sunshine of a true Thermal Belt.

THERE IS A GOOD MARKET OUTLET FOR YOUR PRODUCE. The great bay region of California, comprising San Francisco, Oakland, Berkeley and Alameda, is within ONE HUNDRED AND FORTY MILES OF THIS LAND. It is on the Southern Pacific and Western Pacific Railroads and there is a station on the tract. ALL TRANSPORTATION PROBLEMS HAVE BEEN SUCCESSFULLY MET.

This should be one of the best developed farming sections in the entire state within a few years and make a profitable investment and a comfortable home for every buyer.

LAND VALUES WILL INCREASE WONDERFULLY AND PURCHASERS WILL SECURE A CONSIDERABLE ADVANCE OVER PRESENT PRICES. THE LINDSAY AND PORTERVILLE DISTRICT WAS SIMILAR TO THIS TEN YEARS AGO.

I want to talk with every one who is interested in securing a specially located piece of land. I want them to see this property and to know the prospects of increasing values that await those who purchase now.

YOUR EASTERN FRIENDS WOULD BE INTERESTED IN THIS LAND. Give me their names and I will send them, absolutely free, a three months' subscription to the California Cultivator. They will learn much that will interest them from its pages.

Write me for further particulars relative to this opportunity to establish yourself on a profitable and fully equipped farm.

Dudley Moulton

12th Floor First National Bank Building, San Francisco, Cal.

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California Cultivator
Rural Californian combined with California Cultivator
Vol. XLIII No. 23 LOS ANGELES: THURSDAY, DECEMBER 3, 1914 One Dollar Yearly

Notes on International Fruit Trade

Written for California Cultivator by Dr. F. Franceschi, formerly of Santa Barbara, Now of Florence, Italy. The United States Ranks Third in Exports of Fruit

ONE hundred years ago there existed hardly any international fruit trade, with the exception perhaps of a few dried fruits, like currants, almonds, walnuts, etc. In our day in every country it runs up into millions and millions of dollars.

While complete and reliable statistics are lacking about the fruit production of the different countries, positive and detailed information is available concerning imports and exports of fruits of the United States as well as of many European countries.

Imports of fruits rank as follows:

Great Britain	1911	$84,700,000
Germany	1912	56,500,000
United States	1912	31,400,000
France	1912	18,300,000
Austria-Hungary	1912	14,700,000
Italy	1913	2,300,000
Spain	1911	600,000

In proportion to acreage and population the respective percentages are as follows: Great Britain $9.26 per acre, $1.85 per inhabitant; Germany $4.56 per acre, 86 cents per inhabitant; United States 2 cents per acre, 33 cents per inhabitant; France $7.26 per acre, 47 cents per inhabitant; Austria-Hungary $1.14 per acre, 28 cents per inhabitant; Italy 31 cents per acre, 7 cents per inhabitant; Spain 21 cents per acre, 3 cents per inhabitant.

Exports of fruits rank as follows:

Italy	1913	$45,800,000
Spain	1911	26,700,000
United States	1912	24,000,000
France	1912	18,400,000
Great Britain	1911	8,750,000
Austria-Hungary	1912	6,320,000
Germany	1912	1,350,000

It is to be remarked, however, that the largest portion of exports from Great Britain and Germany is simply "re-exportation" of articles imported from abroad; also that it is the same with a small portion of exports from Austria-Hungary and from France. Exports from Italy, Spain and the United States appear to be almost entirely of national production.

Therefore percentages are given only of the following countries in regard to area of territory and of population: United States 1 cent per acre, 25 cents per inhabitant; Italy $16.14 per acre, $1.33 per inhabitant; Spain $12.00 per acre, $1.39 per inhabitant; France $2.60 per acre, 47 cents per inhabitant; Austria-Hungary 37 cents per acre, 12 cents per inhabitant.

The apparent disparity between the figures of Italy and Spain in the two columns is explained by the fact that the surface area of Italy is not much over half the surface area of Spain, while the population of Italy is nearly 35 millions and that of Spain not much over 19 millions.

The total yearly trade between exports and imports of citrus fruits resulting, from official statistics, amounts to about $70,000,000, namely: Oranges $46,000,000, lemons $18,600,000, citrons, citric acid, etc. $5,400,000.

Spain is the largest exporter of oranges, $10,000,000 in 1911; while Italy is the largest exporter of lemons, $9,500,000 in 1913. Great Britain is the largest importer of oranges, $11,140,000 in 1911; the United States is the largest importer of lemons, about $3,000,000, in 1912, all of them from Italy.

The total yearly trade of fresh fruits amounts to about $168,200,000, being subdivided as follows: Table grapes $19,000,000, apples and pears $63,200,000, apricots and peaches $2,050,000, plums and cherries $6,150,000, bananas $56,000,000, pineapples $14,800,000, other fresh fruits $7,000,000.

The United States is the largest buyer of bananas, $14,500,000 in 1911, also pineapples, $3,600,000. In exports of apples and pears Italy holds the record above all other countries with $7,160,000 against $5,570,000 exported by the United States, $4,170,000 exported by Canada, $3,030,000 by Austria-Hungary, $2,360,000 by France, and $2,310,000 exported by Australia and Tasmania.

The total yearly trade of dried fruits amounts to about $184,500,000, being subdivided as follows: Raisins and currants $45,800,000, dried figs $12,050,000, prunes $15,400,000, dried apples and pears $6,090,000, dried apricots and peaches $7,390,000, almonds $32,500,000, pistachio nuts $1,150,000, walnuts $20,000,000, filberts $20,000,000, dates $8,500,000, carobs $5,200,000, chestnuts $4,400,000, sundry nuts and dried fruits $6,000,000.

The United States is almost the only exporter of dried apples, pears, apricots and peaches, of about $3,300,000 of prunes, and of $1,000,000 of raisins. On the other hand it imports $4,500,000 of walnuts, $3,000,000 of almonds, $1,500,000 each of currants and olives, and $1,000,0000 each of filberts and dried figs.

Greece is almost exclusive exporter of currants, while Asiatic Turkey exports the greatest bulk of raisins. Dried figs are exported principally by Italy and Turkey, about $2,000,000 each, and in smaller quantities by different countries. Next to the United States, Austria-Hungary and France are the greatest exporters of prunes, of which Germany is the largest buyer, $6,095,000. Of almonds the largest producers and exporters are Italy and Spain, each of them taking about $5,000,000, and the largest buyers are Great Britain and Germany, for about $4,000,000 each. The greatest exportation of walnuts is made by France, and the greatest importation by the United States, for $4,000,000 in round figures. Filberts are exported principally from Italy, $2,350,000, also from France, Spain and Turkey, while the greatest buyer is Great Britain for over $4,000,000. Italy is again the largest exporter of chestnuts, for $1,500,000, and Austria-Hungary the largest buyer, for about $500,000.

The total trade (exports and imports) of fruits preserved in different ways may be valued at about $20,000,000, of which $3,000,000 are exported by the United States and $2,000,000 by Italy. Statistics are however far from complete and rather confusing on account of different methods of classification in different countries.

Figures given do not certainly cover the whole fruit trade in every part of the world, but one can learn from them the comparative commercial importance of the different fruits, also which countries are the largest producers and which are the largest consumers.

Celery in California

S. S. Rogers Writes for Cultivator Readers of Methods of Cultivation, Bleaching and Harvesting of One of California's Most Profitable Crops. Mr. Rogers Has Had Wide Experience with This Plant in Nearly All Sections of California

CELERY growing in California, due to the favorable climatic, soil and moisture conditions found in certain sections of the state, is one of the leading agricultural industries. Most of the celery which is produced in California is sold in the eastern markets at the season of the year in which it is impossible to obtain that which was locally grown. There is also a considerable amount handled in the Washington, Oregon and Idaho markets. There is probably no other vegetable which is capable of giving as large returns per acre, providing the local conditions are adapted to its culture.

The leading centers for production of celery in California are situated between Sacramento and Stockton, throughout the delta sections, and in Orange and Los Angeles Counties. There is also considerable celery grown in other sections of this state by the market gardeners, and this product is generally consumed locally.

During the past ten years the approximate amount of land annually devoted in California to celery growing is estimated to be between 5000 and 6000 acres. Prior to 1908 the most of this land so used was situated in Southern California, but from then on, and especially during the last three or four years, the amount of land devoted to celery in Southern California has rapidly diminished with the corresponding increase of the acreage in the northern sections in the vicinity of Stockton.

Although the returns are normally very satisfactory from the cultivation of this crop, the conditions under which it can be grown economically are very exacting, and the various field operations require considerable experience, so that one should not plant too large an area to celery without having actual experience. Below will be found a few directions or suggestions for growing celery under California conditions.

Soils Adapted to Celery Growing

Celery is very poorly adapted to wornout or impoverished soils, and should be planted only where the soil is rich in the essential elements of plant food, and where there is sufficient humus so that the soil will not bake. Celery will grow in several types of soils, the one most universally used being peat. Very heavy, stiff adobe and coarse, gravelly soils should be avoided. Often times the yield is larger on heavier class of soils although it is difficult to start the young plants.

Seed Bed

Celery seed in California is sown directly in the open, the beds varying from six to twelve feet in width, and as long as desirable. The time of

(Continued on page 555)

COMMON SENSE
IN BUYING TREES

Many planters overlook the importance of buying good trees.

The first cost of the tree is the smallest item. You spend years of time and lots of money before you know what your trees will produce.

So-called "cheap" trees are seldom cheap.

It is the extra fancy fruit that sells quickly and brings big profits. Thousands of growers will tell you that Roeding's trees grow true to name and are the most satisfactory kind to plant. We grow everything that grows, but specialize on fine citrus and olive stock.

Free Service

We have a special service to offer every purchaser of our trees, that costs you absolutely nothing. It means protection for you against costly mistakes—help in planting, pruning, spraying, irrigating, marketing, etc. Write today for further information.

Write or Call and See Us

Send us your list of what you expect to plant this season and we will be glad to quote our lowest prices and offer our suggestions.

Roeding & Wood Nursery Co.
J. D. Meriwether, Manager
1607 E. Washington St. Los Angeles, Cal.

FRED L. BORUFF'S
Mission Olive Nursery
"NATURE GROWN TREES"
One, two and three years old. Variety and quality guaranteed.
"The olive is the best paying fruit grown in California"
FRED L. BORUFF **San Fernando, Cal.**

JELLSOPE
One of the Greatest Discoveries of this Age
Destroys SCALE and INSECTS on Trees and Shrubbery

SPRAY made with JELLSOPE is a specific against scale and insects. One hundred gallons can be made at a cost of one dollar ($1.00). Non-injurious to the fruit, no poison, strictly vegetable, and acts as a fertilizer. Is a general all-purpose cleansing soap.

4c per pound in bbl. lots, F. O. B. Los Angeles.
JELLSOPE MFG. CO., 1124 TEMPLE ST., LOS ANGELES, CALIF.

CITRUS HEIGHTS NURSERY
SACRAMENTO, CAL.
We are booking orders for Citrus and Deciduous Trees of all kinds. Guaranteed true to name. Write us for prices.

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FRUIT GROWERS HEADQUARTERS
When in Los Angeles, stay at Hotel Clark. Ideal location. One-half block from Central Park. Close to all stores. Extremely reasonable rates. 555 rooms with bath. Excellent grill service—popular prices.
Hill Street Between 4th and 5th.

Citrus and Tropical Fruits

IMPROVEMENT OF CITRUS FRUITS BY BUD SELECTION

By A. D. Shamel

(Continued from last week)

WE believe that all of the citrus types under observation originated from bud sports or variations. We have traced all of them to individual fruit and to similar limb variations in standard varietal trees. We have propagated most of these typical limb sports and reproduced the existing types in this manner. Therefore it seems safe to attribute the origin of our types to bud sports and their distribution to unintentional propagation, in such instances, certainly, as the propagation of unproductive and undesirable types.

The discovery of the origin of these types from bud variations has an important bearing on methods of citrus propagation. We have found certain individual trees bear all of the types of that particular variety from a single original bud. Other trees bear many variations of type, while in the case of still other trees we have not been able to find any type variations during our performance record work. In the propagation of a particular type it seems reasonable that buds should be cut from trees where only the type desired is found. Trees with many diverse types should be avoided as a rule as a source of buds.

We have used the fruits as indicators of the character of the buds, and have propagated only from trees when in fruit and from limbs on these trees bearing the type of fruit desired. We have found it to be practical to use only buds from the fruit spurs which produce the type of fruit wanted. Whether this method of bud cutting is absolutely necessary or not, we are not in position to say at present. We can say, however, that this kind of budwood has been used very successfully in our work.

There are several theories to account for bud sports. We are not ready to contribute or advocate any theory to account for this phenomena as yet. It is likely that continuous observation of bud sports will throw some light on this matter. We are mainly concerned at this time with the matter of the practical control of bud variation in its relation to the propagation of citrus varieties. We have made considerable progress along this line, sufficient to warrant the statement that the matter of bud control in citrus fruits is both feasible and practicable.

Isolation of Types

By isolation of types we mean the sorting out of the diverse types that occur in our citrus varieties by bud selection. While we do not claim that it will ever be feasible to eliminate variations in these types, we have enough real evidence to prove that the variation can be controlled by bud selection based on performance records and definite tree knowledge. Our progeny tests now coming into fruiting show that some of the parent trees breed uniformly true to type the percentage of variation from type being less than one-third of one per cent in the tests observed so far This condition warrants the statement that when parent trees are found which transmit their characters uniformly, the progeny of such trees can be considered to all practical intents and purpose to be fixed in type

The isolation of types by bud selection is the first important matter for consideration by nurserymen. The propagation of productive and desirable types adapted to particular conditions of soil, climate and other circumstances means greater profit to the grower without increase in the expense of culture.

Pedigreed Trees

The performance records of a parent tree and its progeny constitute to the mind of the writer a pedigree record of the parent tree. The greater the number of performance records and the greater the number of bud generations observed, the more valuable the pedigree records become. Parent trees with performance records of one or more bud generations or their progeny can be truly said to be pedigreed trees.

This term has been claimed to have been so widely abused in the advertisements of nursery stock that it is said to have fallen into disrepute. However, it is the only term advanced to date that covers the ground fully. The terms registered trees and select trees have been suggested as possible substitutes for pedigreed trees, but these suggestions have not met with any general favor as yet.

In this connection the criticism has been advanced that inasmuch as the term pedigreed trees has been abused, the whole matter of honest efforts to propagate select trees is doomed to failure. It would be equally appropriate to say that because the registration of dairy cattle or the dairy cow pedigree records have been abused by dishonest breeders, the whole system of cattle registration and cattle pedigree records is a fraud.

The exact terminology of this subject can only be settled during the gradual evolution of the subject as a whole. The terminology is relatively the least important of the problems involved or questions under serious consideration. Also because

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the success of honest efforts for the improvement of citrus fruits by bud selection may be taken advantage of by unscrupulous persons for unfair practices, there is no more legitimate reason for discrediting the work as a whole, than in the case of the success of improved seed corn varieties, where dishonest seed corn dealers attempted to advertise and sell so-called select and pedigreed seed corn, which was neither select nor pedigreed in any sense of the term. Honest seed corn breeders eventually triumphed, as is usually the case in every progressive achievement of science in all fields of human endeavor.

Any intimation that citrus fruit growers will be universally misled by dishonest practices by unreliable persons is in fact a direct insult to the intelligence and a reflection on the ability and judgment of our citrus growers as a whole.

Performance Records

There are two kinds of citrus performance records in use, one the scientific and detailed records for the purpose of study, and the other the practical records used in orchard management. In the scientific work, the forms for record keeping have been worked out with great care for each variety and have been modified and improved as our knowledge of the subject developed. It is not practicable to present the many record forms now used for this purpose in this paper. Anyone who wishes to secure copies of these forms can do so by correspondence with the writer at Riverside, California.

The practical citrus performance record forms are based on the facts of the amount of individual tree production and notes on the commercial quality of this product. The experience of citrus growers who have adopted citrus performance record work and who have used it for one or more years justifies a recommendation for the general introduction of individual tree records. The selection of any particular method or methods will depend upon circumstances. In any event the method selected should be carefully considered, preference being given to the adoption of a method which has been tried out successfully.

Tree Numbers

A comprehensive method of individual numbering is absolutely essential to successful performance record work and individual tree study. The method used in our performance record work is as follows: Each tree is given a number consisting of the number of the plot, the number of the row in which the tree occurs, and the number of the tree in the row, always counting from a fixed starting point, as for instance the point nearest the source of irrigation water. The number of a tree located in plot 3, row 14 and tree 17 in the row would be 3-14-17. The number is painted on the tree trunk with pure white lead paint after the dust has been brushed off the bark where the paint is to be applied. The arrangement of the numbers can be suited to tree conditions, as for instance in small nursery trees they can be arranged vertically, a single number in a place, in regular order down the trunk. Usually we have painted the number with a small camels hair brush, always at comparatively the same position on all trees. The numbers should be clear-cut, plain and unmistakable. One man can number an average of 300 trees daily. Our numbers, five years old, are as plain today as at the beginning.

It has been found that the use of this numbering system is of great advantage to the growers, entirely aside from performance record work, as for instance in the fumigation of particular trees, pruning and individual tree care in many respects.

(To be continued)

RIPE ORANGES

More definite information is being given to orange growers this year regarding the requirements, or rather the suggestions, by the department of agriculture as to what constitutes a ripe orange. We have received from Secretary F. O. Wallschlaeger of the Citrus Protective League the following announcement from the bureau of chemistry of the United States department of agriculture, through Mr. Benj. R. Hart, chief of the western district:

"The bureau of chemistry has received repeated requests to define the terms immature and maturity as used in Food Inspection Decision 133, relating to the coloring of green citrus fruits. Such a definition seems desirable in view of the uncertainty now existing regarding the scope of this decision. As a result of the investigations carried out during the season 1913 and 1914, the bureau of chemistry considers California oranges to be immature if the juice does not contain soluble solids equal to or in excess of eight parts to every part of acid contained in the juice, the acidity of the juice to be calculated as citric acid without water of crystallization. Owing to the fact that opportunity has been given to study the composition of California oranges during one season only the ratio set at this time is lower than that which is believed to be the minimum for properly matured fruit. It may therefore be expected that the requirements will be made more strict after data from several crops are available."

Decision 133 referred to above is as follows:

"The attention of the board of food and drug inspection has been directed to the shipment in interstate commerce of green, immature citrus fruits, particularly oranges, which have been artificially colored by holding in a warm, moist atmosphere for a short period of time after removal from the tree. Evidence is adduced showing that such oranges do not change in sugar or acid content after removal from the tree. Evidence further shows that the same oranges remaining on the tree increase markedly in sugar content and decrease in acid content. Further, there is evidence to show that the consumption of such immature oranges, especially by children, is apt to be attended by serious disturbances of the digestive system.

"Under the food and drugs act of June 30, 1906, an article of food is adulterated, 'if it is mixed, colored, powdered, coated, or stained in a manner whereby damage or inferiority is concealed.' It is the opinion of the board that oranges treated as mentioned above are colored in a manner whereby inferiority is concealed, and are, therefore, adulterated.

"The board recognizes the fact that certain varieties of oranges attain maturity as to size, sweetness, and acidity before the color changes from green to yellow, and this decision is not intended to interfere with the marketing of such oranges."

Homes fail as business houses fail, because of inefficient management. But inefficient management, it is safe to say, is most often the result of a lack of a single purpose, a clearly defined ideal or differing ideals.—Thomas Dreier.

The Panama Canal and The California Fruit Grower.

P-A-N-A-M-A C-A-N-A-L spells, to most people, merely Panama Canal, but to the California Fruit Grower it spells OPPORTUNITY, for fruit can now be shipped, via the Canal, to the Atlantic Seaboard, at

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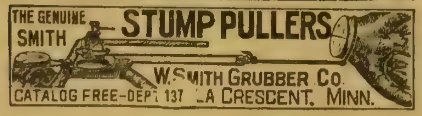
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Deciduous Fruits

MANURING YOUNG ORCHARD TREES

Written for California Cultivator
By Sacramento Valley Contributor

FREQUENT inquiry is being made by those who have young orchards in the Sacramento Valley about manuring them. They want to know if stable manure should be placed around the trees, if so, how much and in what way, and what condition the manure should be in, whether fresh and strawy as it comes direct from the stable, or well rotted.

Then there are some others who have recently come to the country from the East who say, "We have bought land here on the representation that it is very rich in the elements of plant food and that chemical analyses show that it will require decades of heavy cropping to deplete the soil. Why should barnyard manure or any other fertilizer be necessary?"

A good general answer to this use of barnyard manure question is to put it on the land at any time and in any condition, as long as the land is not so wet that it will be injured by stock and wagon puddling or compacting the soil, providing large piles are not put closely around the tree so that fermentation would injure the bark.

How much? We assume that few will find it possible to get too much at reasonable cost in labor or money. We would start in by putting a layer four or six inches deep for a distance of from five to ten feet around the tree, leaving a circle of a foot or so close around the tree with a thin layer of an inch or two. If you have more than this widen the circle until the whole area is covered. On heavy land, into which water penetrates slowly so that there is little danger of much loss of fertility by percolation a good time for this application is now before the heavy rains. These rains and the weathering of the winter will help to incorporate the manure into the soil.

What kind of manure for our heavy lands? Any kind, from straw to ten-year-old sheep manure. All will help to open up the soil, make it more porous, open, and granular in texture and of better physical or mechanical condition. This is the thing it needs more than the chemical elements of fertility added by the manure. If you have strawy, fresh horse manure get it away from the buildings where it will breed flies and lose valuable plant food through the processes of decomposition and put it on the land. For special hothouse or truck crops it might be all right to compost and rot it but it will be better for the average new settler who has a young orchard on fairly heavy land to apply it to the soil as soon after the manure is made as possible. At the Monroeville orchard of the Sacramento Valley Irrigation Company, at St. John in Glenn County, the manure from the mule barn is hauled out and spread around the trees every day in the year.

Diversified farming means livestock and fruit and other crops and that means manure for the land and a permanent agriculture.

THE CHRYSOPA OR APHIS LION

A correspondent at Yuma, Arizona, recently sent specimens of aphis infested cotton leaves to the entomologist of the station, Dr. A. W. Morrill of Phoenix, who in his reply, gives the following interesting information concerning a beneficial insect known as the "aphis lion."

Among the infested leaves I find two specimens of lady bugs, one the adult and one the larval form. There is also a specimen of the larva of an aphis lion. This is about one-quarter of an inch long, pale yellow in color marked with brown. It is rather thick in the middle and tapering toward both ends. Its head is provided with long curved jaws or mandibles, which are used to hold the insect prey while feeding. These little insects eat a great many plant lice during their larval stage, and when full grown spin a white, almost spherical cocoon, in which transformation to the adult takes place. The adult insect is greenish in color with long delicate wings which come together in a roof-like manner over the body. When handled it gives off a disagreeable pungent odor which is difficult to remove from the fingers even with the aid of soap and water. The adult lays a number of eggs which it attaches to the plant—usually to the under side of the leaf. These eggs may be laid singly or in groups. They are always attached with a slender stalk about half an inch in length. As each egg hatches the young goes down the egg stalk and crawls around in search of food. It will eat anything of the nature of an insect, but as the mother insect has always invariably taken care to select an aphis infested leaf or plant, the bulk of the food consists of aphids. To return to the matter of egg stalks, it is interesting to note that this is a provision of nature, since it is quite likely that if the eggs were all attached to the leaf direct the first young aphis lion to hatch would make its first meal on its unhatched brothers and sisters.—Southwest Stockman.

CONTROL OF PLANT LICE

Since aphides, commonly called "plant lice," are sucking insects they are to be controlled by a contact spray of some sort. For this purpose kerosene emulsion, common soap solution, whale oil soap solution, or tobacco extracts may be used.

Kerosene emulsion, diluted one part to ten with water, is effective but so often is not properly made and injury is apt to result to the foliage.

Common soap solution may be made by dissolving laundry soap in water at the rate of one pound of soap to four or five gallons of water.

Whale oil soap solution—the potash soap being the best—is made by dissolving one pound of soap in five or six gallons of water. Some kinds may be used even one pound to eight gallons.

Tobacco extracts may be home-made or of the commercial preparation. Small amounts may be made for use by steeping one pound of tobacco leaves in four or five gallons of water. For extensive spraying, or if the material can be obtained near-by, the commercial tobacco extract is excellent. It contains 40 per cent of nicotine sulphate and for plant lice requires dilution with water at the rate of three-fourths pint to one pint of the extract to 100 gallons of water. Three or four pounds of soap are added to this amount to increase the sticking qualities.

Any of the above sprays should be applied thoroughly, care being taken to get the spray into any of the curled leaves and onto the aphides so as to wet them thoroughly. The manner of application of the spray will depend upon the size of the plant to be sprayed and upon the nature of the plant, whether tree, vine, low crops of the garden, flowering plants or house plants.—D. E. Merrill, New Mexico Station Entomologist.

PHYTOPATHOLOGICAL SOCIETY

A meeting of the Western American Phytopathological Society is to be held at Corvallis, Oregon, December 28-30. This meeting will be planned primarily for the benefit of technical plant pathologists so that they may get together to discuss problems of particular interest in the western area of the United States and Canada. The practical problems connected with control of plant diseases, however, will also be considered by the meeting, so that it should be of interest not only to technical men but also to practical growers who are interested in making a careful study of problems which they have. Plant pathologists and persons who are interested are cordially invited to attend this meeting.—Wm. T. Horne, secretary-treasurer.

APPLE RECIPES

The International Apple Shippers' Association of Baltimore, Maryland, of which U. Grant Border is chief booster, is mailing 197 delicious, health-giving apple recipes, each tested by an expert. The compilers of the book seem to look at the question somewhat one-sidedly in that they scarcely refer to Pacific Coast apples, but there are a vast number of very valuable recipes and facts given in the book.

Bumper crops without market facilities have sent more farmers staggering down the back alleys of agriculture than all the pests and drouths that ever cursed the nation.

Agriculture needs all the great men it can get.

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Reviews of New Books

SOILS

Soils, Their Properties, Improvement, Management, and the Problems of Crop Growing and Crop Feeding, by Charles William Burkett, Director of the Agricultural Experiment Station, Kansas State Agricultural College, published by Orange Judd Company, New York, price $1.25. The Cultivator will be glad to secure the book for its subscribers at the above price or, including a year's subscription to the Cultivator, at $2.10.

The book has 300 pages filled with practical matter pertaining to management and improvement of soils. There are many half tones and line engravings, some of them full pages, some smaller insets. From the introduction we quote:

"The soil: the clothing of the earth.—The real clothing of the earth is the soil—and we are to study it: the good, kind soil that brings us so many useful and beautiful and wholesome things. For with the soil is the real beginning of all material things, of all useful things; of all things that secure contentment; of all things that lead to comfort and happiness; of all things that have to do with food and raiment and shelter; of all things that advance mankind and promote civilization. All of these things spring from the soil—from the simple, inanimate material thing we call dirt.

"The earth's clothing includes the soil in all its variations, includes the dirt in which plants root and feed and grow; includes the rock and stony structures of sea and mountain; includes the waters of the soil and of the deep; includes the minerals in the mines that man seeks, often losing his life in the search; includes the insect, the worm, the bacterium, and every form of life that labors for its usefulness and grandeur; includes the fruits of field and soil—the life that grows therein and makes food for man and beast; includes the tree that grows and fructifies in forest or orchard; includes the cultivated crop of every variety and species, of every form and description; includes every vegetable type that provides raiment or covering in the open, or when removed from its place of growth becomes house and shelter that protects and guards and comforts; includes everything that has use and that supplies a want in every part of the world and for every purpose."

There are 30 chapters, and amongst the many topics pertaining to soils which are touched upon are, soil makers, the soils that living things have made, what we find in soils, getting acquainted with plant food, the role that tillage plays, the release of soil nitrogen; the return to the air, nitrification; nitrogen made ready for plants, stable manure, its composition and its preservation, handling manure on the farm, buying plant food for the soil, using chemical manures intelligently, the old worn-out soils: what we may do for them.

LITERATURE ON HARVESTING AND MARKETING FRUITS

Fruit Harvesting, Storing, Marketing: F. A. Waugh. Orange Judd Company, N. Y., 1901.

Cold Storage, with special reference to the pear and peach: G. H. Powell. U. S. Dept., Agr., Bureau of Plant Industry Bulletin 40.

The Handling of Fruit for Transportation: G. H. Powell. U. S. Dept. Agr. Yearbook, 1905, pp. 349-362.

Cooperation in the Handling and Marketing of Fruit: G. H. Powell. U. S. Dept. Agr. Yearbook, 1910, pp. 391-406.

The Reduction of Waste in Marketing: F. Andrews. U. S. Dept. Agr. Yearbook, 1911, pp. 105-176.

Packing Apples and Peaches: W. H. Alderman. W. Va. Agr. Exp. Sta. Bulletin 139.

The Art of Packing Apples: Methods by Which Experts do 50 Perfect Boxes in a day: Country Gentleman, V. 78, No. 32, p. 1157, Aug. 9, 1913.

Fruit Packages in the Middle West: L. G. Herron. Okla. Sta. Cir 21, pp. 3-27.

Cooperative Marketing (Account of Wathena Fruit Growers' Association): W. R. Martin. Kans. Farmer, V. 51, No. 13, p. 13, March 29, 1913.

The Handling of Deciduous Fruits on the Pacific Coast: A. V. Stubenrauch U. S. Dept. Agr., Yearbook, 1909, p. 365-374.

Bartlett Pear Precooling in Rogue River Valley: A. V. Stubenrauch, H. J. Ramsey. U. S. Dept. Agr., Bureau of Plant Industry Cir. 114, 1913.

Operating Cost of a Well Established New York Apple Orchard: G. H. Miller, U. S. Dept. Agr. Bulletin No. 130, 1914.

PRACTICAL ORCHARDING

Practical Orcharding on Rough Lands, by Shepard Wells Moore, published by The New Werner Company, Akron, Ohio. The Cultivator will be glad to secure the book for its subscribers.

The book contains nearly 300 pages of popularly written material touching upon orcharding in general and giving much practical information as to soils, keeping up fertility, etc. There are 14 chapters touching upon essentials, orcharding as a business, location, preparation, selection of stock, planting and cultivation, in fact, general information as to orcharding.

"This is an age of advancement. As a people we are proud of our achievements. With eager watchful eye we note the ever varying customs of those about us, even the fashions that come and go with each recurring season as so many fast flying shuttles. Each shuttle carries its own thread of special hue and cannot fail to leave its trace in both warp and woof of the nation's fabric."

ALFALFA IN ORCHARDS

A Colorado grower says: "The most serious objection to alfalfa in an orchard in our western states is due to the fact that alfalfa affords ideal food conditions for the rapid increase of grasshoppers in the orchard which are apt to injure the fruit or foliage."

PEACH TREE BORER

This is a pest of peach growers all over the country. The larvae live between the bark and wood a little below the surface of the ground in a mass of gum and woody material. It is a soft whitish caterpillar with a reddish-brown head. The egg from which this hatches is laid on the trunk of the tree at or near the surface of the ground by a handsome day flying moth. The larvae after hatching eat through into the inner bark and sapwood of trunk or large roots, upon which they feed, causing a gummy exudation. They feed in this way for about a year, often almost girdling a large root of the tree.

When the larvae are full grown they construct cocoons of the gummy exudation, their casting and silk, about an inch below the surface of the ground where about three or four weeks later they change to moths. Although there is but one generation in a season, the moths are present most of the summer. The larvae reach maturity at different times, thus keeping up almost a constant supply of adults.

The most satisfactory method of control has been to go over the trees and dig out all the larvae once in the spring and again in early fall. Their presence is easily detected by the gummy exudation on the crown and large roots.—Geo. M. List, Colorado Agriculture College.

TREES

All Varieties

Deciduous
Citrus
Ornamental
Palms — Roses
Grape Vines — etc.

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PLUMS
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The demand for high-grade nursery stock so far this season is unprecedented, and to avoid disappointment we advise that you write us at once what your probable requirements will be.

ROEDING TRUE TREES FRESNO, CAL.

No matter how large or how small a quantity of trees or vines you may be figuring on setting out this season, you will do well to get in touch with us at once and get our prices and suggestions.

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Send us your list for prices. We will gladly advise with you free of charge and without any obligation on your part.

CALIMYRNA FIGS

Our New 1914 --- 1915 Illustrated Price Catalog WILL SOON BE READY

If you wish a copy, send us your name and address now and we will see that it is mailed to you as soon as it comes off the press. It will briefly describe and price all the stock grown by us, comprising over 2000 varieties of fruit and ornamental trees, plants, vines, etc.

This is the celebrated Smyrna Fig of Commerce—introduced and grown by us successfully. It is undoubtedly the only fig to plant for shipping, table and drying. Write us for further information. We also have a good stock of the Adriatic types.

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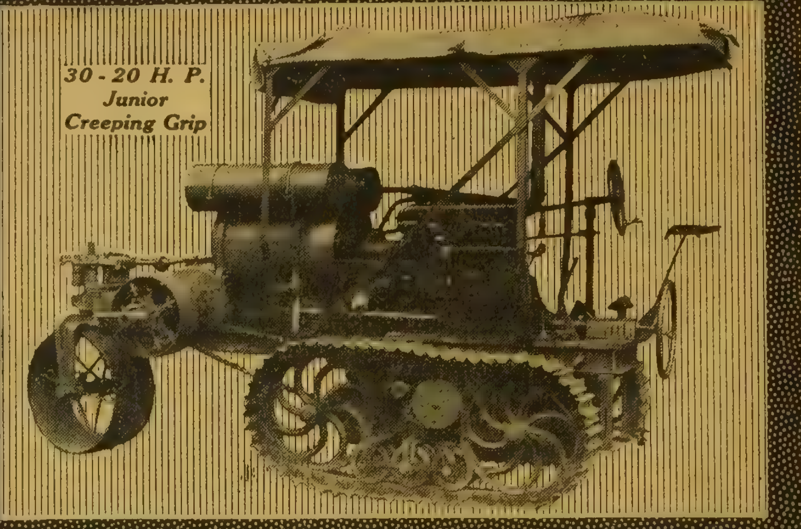

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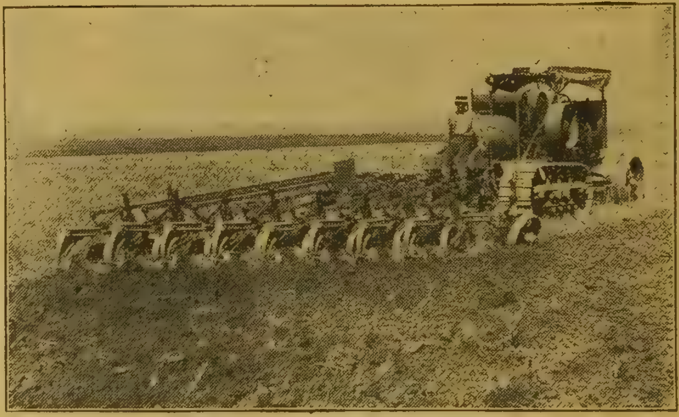

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Farm Bureau

DIRECTOR B. H. Crocheron writes:

"Solano County has successfully formed its farm bureau and passed its appropriation for a farm adviser, so that I will request the board of regents to make the appointment at an early date. Glenn County has also passed its appropriation for a farm adviser and is forming its farm bureau with the expectation that it will soon reach a successful membership so that we will be able to appoint a farm adviser this year.

"With these appointments our funds will be exhausted, so that no more appointments are likely to occur until July first, next. Several counties are on the waiting list, hoping for appointments the next fiscal year. The first of these will be Stanislaus County which has passed its appropriation and is proceeding to form its farm bureau. Numerous other counties are agitating the matter. Among these are Placer, Mendocino, Del Norte, Fresno, Tulare, Los Angeles, Monterey and others."

We give the following schedules of meetings of the different farm bureau centers for December.

Kern County, R. R. Mack, Adviser.

Delano, December 2, 8:00 p.m., R. H. Hiett, director; McFarland, December 4, 8:00 p.m., H. L. Heard, director; Wasco, December 7, 8:00 p.m., Prof. W. T. Fowler,, director; Rosedale, December 9, 8:00 p.m., J. Waters, director; Rio Bravo, December 12, 8:00 p.m., F. W. Haag, director; Panama, December 14, 8:00 p.m., A. B. Robinson, director; Muroc, December 16, 8:00 p.m., C. E. Clark, director; Willow Springs, December 17, 2:00 p.m., H. W. Mongold, director; Tehachapi, December 21, 8:00 p.m., L. T. Jenkins, director; Arvin, December 28, 7:30 p.m., R. Haven, director.

Ventura County, William B. Parker, Adviser.

Mound, December 1; Ventura Avenue, December 4; Fillmore, December 7; Oxnard, December 9; Camarillo, December 11; Nordhoff, December 14; Saticoy, December 16; Moorpark, December 17; Somis, December 21; Santa Paula, December 29.

San Diego County, Jas. A. Armstrong, Adviser.

Encinitas, Monday, December 7; Vista, Wednesday, December 2; Fallbrook, Friday, December 4; Escondido, Monday, December, 14; Julian, Wednesday, December 9; Dehesa, Friday, December 11; Lemon Grove, Monday, December 21; El Cajon, Wednesday, December 16; Jamul, Friday, December 18; Chula Vista, Monday, December 28; San Ysidro, Wednesday, December 23; Poway, Friday, December 25; Campo and Boulevard, Wednesday, December 30.

Directors Meeting.—The regular monthly meeting of the directors of the San Diego County farm bureau will be held at El Cajon at 10:30 a.m., December 5. Among other matters of business will be first, a further report from the marketing committee, second, the naming of a committee on arrangements for the annual meeting in February, third, the appointment of a nominating committee for new officers for the next year, fourth, the extent of membership rights to members joining after November 15.—H. A. Weinland, secretary-treasurer.

J. A. Prizer, entomologist for San Diego Fruit Company, has carried on extensive investigation on gum disease of lemons, under the direction of Prof. H. S. Fawcett of the Riverside Experiment Station. He has proven that it is contagious, that it may be cured and what's more important, it can be largely prevented by painting trunks of trees with Bordeaux paste.

SOME CAUSES OF NOISY OPERATION

Probably one of the best books yet put out on the constructon, operation, maintenance and repair of the automobile is The Modern Gasoline Automobile, by Page, published by the Norman W. Henley Company of New York. From its 700 pages of well written material as to the maintenance and care of the machine, which is becoming so popular, we take the following regarding some causes of noisy operation:

There are a number of power plant derangements which give positive indication because of noisy operation. Any knocking or rattling sounds are usually produced by wear in connecting rods or main bearings of the engine, though sometimes a sharp metallic knock, which is very much the same as that produced by a loose bearing, is due to carbon deposits in the cylinder heads, or premature ignition due to advanced spark-time lever. Squeaking sounds invariably indicate dry bearings, and whenever such a sound is heard it should be immediately located and oil applied to the parts thus denoting their dry condition. Whistling or blowing sounds are produced by leaks, either in the engine itself or in the gas manifolds. A sharp whistle denotes the escape of gas under pressure and is usually caused by a defective packing or gasket that seals a portion of the combustion chamber or that is used for a joint as the exhaust manifold. A blowing sound indicates a leaky packing in crank case. Grinding noises in the motor are usually caused by the timing gears and will obtain if these gears are dry or if they have become worn. Whenever a loud knocking sound is heard careful inspection should be made to locate the cause of the trouble. Much harm may be done in a few minutes if the engine is run with loose connecting rods or bearings that would be prevented by taking up the wear or looseness between the parts by some means of adjustment.

As a general rule the average motorist is not sufficiently informed mechanically to undertake repairs of worn motor parts, and whenever repairs of a mechanical nature are necessary it will be much more satisfactory and cheaper to have them done by experienced mechanics or repairmen. Ordinary adjustments may be attempted by even the inexpert, but it should be remembered that nothing may be changed without a good reason existing for making the alteration. It is well for the motorist to be familiar with the common derangements which may result in irregular engine operation or loss of power.

It is well to remember that common troubles can only be located by systematic search and that causes of imperfect engine action are often located by those who do not recognize the symptoms because they follow a logical process of elimination.

Bees and Their Care

BEE DISEASE GERMS DESTROYED BY HEAT

HOW much heat is necessary to destroy the germs that produce disease among bees? This question has been asked by many bee keepers who, although they know how heat is employed to reduce their losses from disease, do not know exactly at what temperatures to use it for different diseases. The question is now answered by the United States department of agriculture, which has been conducting experiments for two years to obtain the information.

Honey is often heated to destroy the germs of infectious bee diseases, and similar heat is also used in the rendering of wax and in the making of comb foundations. The direct flame applied to the inside of the hives that have had infected colonies in them has also been used in the control of these diseases. Those who handle honey commercially will be interested to know that when honey is heated to a temperature of 160 degrees Fahrenheit the germs of three of the four infectious diseases of bees that give trouble to bee keepers are destroyed.

There are four bee diseases now known to be infectious, the germs of which may be destroyed by applying heat of certain temperatures for 10 minutes. These diseases are European foul brood, American foul brood, sacbrood, and Nosema disease. The minimum temperatures at which heat will destroy these diseases respectively are as follows:

Name—	Minimum temperature Lies somewhere between Deg. F.	Being approximately Deg. F.
European foul brood	140-149	146
American foul brood	194-212	208
Sacbrood	131-140	137
Nosema disease	131-140	135

In practice the bee keeper in destroying these germs will naturally use a quantity of heat somewhat in excess of the minimum amount that is absolutely necessary.

The melting point of beeswax is between 143 degrees and 148 degrees, Fahrenheit, and this temperature will destroy the germ of the European foul brood in 10 minutes. It is about 10 degrees Fahrenheit above that which will destroy sacbrood and Nosema disease. Therefore, when wax is kept in a melted state for about 10 minutes there is a certainty that three of the four dangerous diseases are destroyed.

Different Manifestations of Disease.

The name "foul brood" was used nearly a century and a half ago to describe disorder of bees attacking the brood of bees, and for a long time any similar destructive disease was called by that name. About half a century ago bee keepers began to notice that all brood diseases are not the same. At present three distinct infectious bee diseases are known that attack the brood only: European foul brood, American foul brood and sacbrood. European foul brood causes the larvae to die early and is not accompanied by the pronounced odor which enables bee keepers to detect American foul brood. In the former case the larvae usually die before the cells containing them are capped; in the latter they usually die after the cells are capped. In the latter disease the decaying larvae show a marked viscidity (ropiness), which is absent in the former.

The disease "sacbrood" received its name from the saclike appearance of the dead larvae when they are removed from the cell. This is the most characteristic symptom of the disease which almost invariably causes the affected larvae to die after the cell is capped.

Diseased in the Spring.

In the spring of the year many bees, especially those of weak colonies, show upon examination a high percentage affected with Nosema disease, a disease that attacks adult bees only. From 50 to 90 per cent of the bees of a weak colony are sometimes infected with the parasite Nosema apis that causes this disease. The bee's stomach is the organ affected. Many colonies that are strong and apparently doing well are found to contain some bees infected with this parasite.

A new bulletin of the department (No. 92), "Destruction of Germs of Infectious Bee Diseases by Heating," contains details of the results of experiments that have been made on this bee problem. Although considerable work must still be done before methods can be recommended, still the results of experiments to date will give bee keepers practical data that may aid them in reducing their losses, and bee keepers who have found these infectious diseases troublesome are invited to apply to Washington for the bulletin, which will be sent free of charge.

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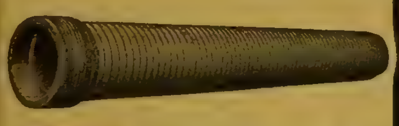

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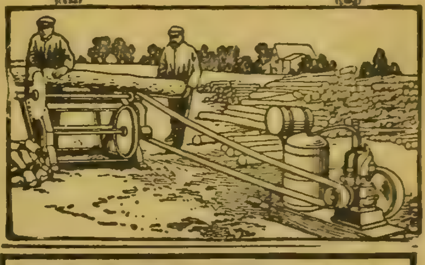

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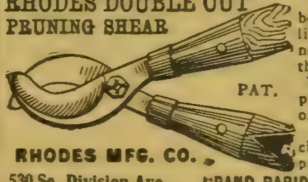

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The Lawn and Flower Garden

THIS MONTH IN SOUTHERN CALIFORNIA

Written for California Cultivator
By O. M. Morris

THERE is yet time to plant winter flowering bulbs, though they should be gotten in as soon as possible. Of the summer flowering types gladioli and tuberoses may be planted this month. Such varieties as begonias, dahlias and cyclamen will succeed better if planted in March or April, but the so-called winter flowering bulbs should be planted as quickly as possible.

Seed of phlox, stocks, centaurias, scabiosa, coreopsis, mignonette and candytuft, which are all quite hardy, may be planted during December for early spring blooming.

Through the efforts of the 1915 City Beautiful Committee (Los Angeles) in offering valuable prizes for best results obtained in certain plats of land much interest is being manifested among school children and home garden planters; in fact, the younger planters are evincing more interest than ever before, and no doubt the experience obtained will prove of great benefit. The county is expending more than $25,000 for prizes and seeds. This work is under the supervision of Mr. C. L. Schufeldt, 419 South Hill street, Los Angeles, who, with a corps of assistants, is getting matters in shape toward the making of the "City Beautiful" for 1915. Those interested in this work will do well to consult Mr. Schufeldt.

GARDEN HARMONY

Written for California Cultivator
By Ernest Braunton

THE chief requisite of a garden is harmony. While in general it should harmonize with its surroundings, it is still more essential that each part of it should harmonize with all other parts. Refinement should also be in evidence throughout this perfect accord.

If one part of the garden should be given over to other uses or other style or styles than the main part there should be a division by hedge, wall or fence so that one part is not so plainly shown from the other as to enable comparison of the two from any point of view. This may sound a little technical, but if for but a moment considered the suggestion is a simple one simply expressed and the reason therefore apparent to all.

The fact that I am English may be the cause of a strong leaning toward privacy, which is the keynote of all English gardens. Recently garden prizes were offered in England for the best designs and two American women were among the winners. In criticising the American design standing highest, winning third prize, the judges stated the back yard was insufficiently screened by shrubbery and it was feared that neighbors might be offended by a too open view of drying clothes. Speed the day when we will so plan in America as to consider even the minor points of possible objection from our neighbors.

As a rule all plants thrive better with some shelter so that seclusion really brings better results in gardening. No plant or collection of plants shows so well in the open as in some secluded and therefore perfectly natural setting. A protected garden always holds something in reserve for the visitor, for it cannot all be seen at a glance. There is always a pleasure in the experience of discovery. Much of the charm of a garden may be produced by a fitting entrance, yet why an entrance to a garden that is "open?" How may a path "lead" to a garden when all may be seen before arrival at the entrance? Let us have gardens that we may really enter and not of that vulgar type that stick up and out like a cameo setting on a finger ring. Then, when properly planted we shall have harmony both materially and spiritually.

WEEPING WILLOW OF GRACEFUL DROOPING HABIT.
Courtesy Armstrong Nurseries.

Desert Giants

It has long been thought that of desert plants not strictly trees the giant cactus, Cereus giganteus, of Arizona and northern Mexico was the largest. But recently I have received photographs and measurements of a tree yucca (Yucca arborescens) of the Mohave desert, known locally as the Joshua tree, that surpasses both in height and girth any giant cactus known. This desert sentinel is a much- branched tree 65 feet high and 23 feet around at one foot above the soil. When it is considered that the substance of yuccas is not really wood and therefore not a tree proper we may once more proclaim that "California has the biggest," etc., etc.

Changing Plant Sex

Someone asks me if plant sex may really be changed. Such changes are occasionally brought about in plants that bear the two sexes of its flowers on different plants. Cases are known in northern Africa where there has been an excess of male date palms; the natives pull out the first flower spike in the hope that the next one will prove female, and they are not always disappointed. The second, and all subsequent flower-spikes, bear nothing but female blossoms and of course bear a resultant crop of dates. This change is infrequent however and therefore not to be depended upon for control of date orchards. The tropical papaya or paw-paw is more often changed by the same method or by cutting off the whole top of male plants. Such changes are well-authenticated, having been vouched for by plant experts employed by Uncle Sam.

Stir the Soil

It seems rather odd to visit a strictly rural garden and find the plants suffering through a lack of soil stirring, yet I have found such cases. One would think that on up-to-date ranches where soil practices are on a high plane that experience would dictate garden methods, yet I have found gardens in the midst of splendid citrus orchards that were suffering through need of just such treatment as had for years been given surrounding orchards. Too many of the gardens lack in soil stirring. While the orchard is plowed and cultivated deeply, the garden is often hard from continual trampling. Again, lime the soil but do not fertilize at same time or until 60 days thereafter. Neither lime after fertilizing for six months.

Plant Bulbs Now

Do not longer delay the planting of all sorts of bulbs, except dahlias, elephants ears, cannas and those things known to be of tropical nativity. Leave such until March or, if the season be late, until April. But all the common run of bulbs may go into the soil now. Tigridias should be reserved for March and gladioli planted any time from now to June. I believe best results come for gladioli growers when they plant in January and February. It was so proven this year, at least, though seasons may differ in this respect.

Sow Seeds Shallow

Now that cold wet weather is with us do not cover garden seeds too deeply, either flowers or vegetables. So many seeds are small and their germination weak except under most favorable circumstances, and these usually are warm, moist soils. With us at this season soils are generally too wet and too cold for the finer seeds. Unless hot dry spells of weather come, and these are not now expected, there is little danger of non-germination through lack of sufficient covering.

Plant Tropical Fruits

I would not advise anyone to plant

(Continued on page 563)

Bulbs

For fall and winter planting; also Flower Seeds for fall sowing. New Catalogue now ready, mailed free upon application.

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Bulbs

Small Fruits Vegetables

THIS MONTH IN SOUTHERN CALIFORNIA

Written for California Cultivator
By O. M. Morris

WHILE it is a little cold this month for any great amount of planting the following list of vegetables will be found hardy: Broad Windsor beans, turnips, beets, Brussels sprouts, cabbage and cauliflower, carrots, endive, chard, lettuce, onion sets and seed, radish, spinach, leek, Georgia collards, kale and mustard.

Plants of strawberries, rhubarb, horseradish, asparagus and chayotes may be put out. Best cultural method for the latter vegetable is to plant in six-inch pots or small boxes, putting seed end down, holding them in this shape for two or three months and transplanting to permanent quarters after the ground becomes somewhat warm. They require but very little moisture until after the growth is well started. Too much watering and planting too deep cause most of the failures. When planting the fruit should be left half uncovered, that is, the blossom end should be planted about one-half the depth of the fruit. Keep in a warm sheltered place and water very slightly until the growth is well started, when it may be given more sun and moisture.

THIS MONTH IN THE SACRAMENTO VALLEY

Written for California Cultivator
By S. S. Rogers

The planting calendar for the Sacramento Valley during the month of December includes only those vegetables which are partially resistant to frost. During this month only the hardiest vegetables should be grown in the open.

All root crops such as beets, carrots, turnips and so forth can be planted during this month with safety. In sections of the valley in which the frost is not too severe peas can also be planted, using the Telephone or Stratagem varieties. The seed for late spring cabbage should be planted this month, using the Early Flat Dutch variety.

Where the moisture conditions are favorable and where the weather is not too cool, potatoes can be planted. It is recommended only in certain very favorable localities to plant a large area to potatoes during this month, for there is a liability of the vines being seriously injured by frosts which will come during the next two months or so. If potatoes are to be planted this month, the Early Rose will be found a good variety. A few of the market gardeners plant the Democrat and Garnet Chili varieties, especially through the bay section.

It might be well to make another planting of cauliflower, although it is getting a little late in the season to plant this vegetable in many sections of the valley.

A very necessary adjunct to the vegetable garden is the hot bed, and as its use is a necessity in the garden, a few words about its construction and care would possibly be of interest at this time.

Construction of Hot Beds

There are several methods for making hot beds, influenced largely by the local conditions and uses to which they are to be put. The method given below is one which is in common use throughout the valley and is proving satisfactory.

In the construction of hot beds, the first thing to do is to dig a pit five or six feet wide, about two and one-half feet deep and long enough to accommodate the plants. As a rule a bed about 20 feet long will be found more convenient than a longer one, and under ordinary conditions it would be better to build three 20-foot beds in preference to one 60-foot bed. After the pit has been dug a board frame is put around it, having the south side six inches to one foot high and the north side two to three feet in height. The ends of the bed should be enclosed with boards and made as tight as possible.

About six inches of straw should be laid on the bottom of the pit and on the top of this should be put about two feet of stable manure, which should be tamped down firmly and watered. The following day the bed should be examined and if the heat is rather uneven the manure should be forked over and again tamped and re-wet. Earth should be put on top of the manure from a depth varying from six inches to one foot, depending somewhat upon the kind of vegetables which are to be grown.

The soil for this purpose should be of a sandy nature, and if it is not rich enough, a heavy coating of well rotted manure should be mixed with it. After the earth has been smoothed, the bed is allowed to remain in this condition a short time until it has cooled off sufficiently to plant the seeds.

In the eastern states where the weather is very cold it is absolutely necessary that the top of the beds be covered with glass sash. In California where the winters are mild the beds can be covered either by the glass sash or muslin, and as a rule the latter covering will be found satisfactory and is much cheaper than the glass. During warm days the top should be rolled back and put over the beds again during the nights and cold weather.

The heat can be kept in the bed much better if the outside is banked with earth, or preferably manure, and the beds should be in as warm a spot as can be found. Generally the south side of a barn, shed or house makes a very good location, providing water can be had conveniently.

The care of the plants in the beds will be taken up in a future issue of the California Cultivator.

CELERY CULTLRE IN CALIFORNIA

(Continued from page 547)

sowing varies from February to April inclusive. The soil to be used for the seed bed should be put in the finest possible condition, both as to tilth and freedom from weeds, having the ground moist up to the surface. The seed is sown broadcast in these beds, covered by the use of hand rakes and the water is generally applied by running it in the furrows between the beds. The plants are left in the beds from two to four months before pulling, the exact time depending upon the local conditions. If the plants are growing too rank it is often necessary to mow the tops off with a scythe. Hand weeding is generally necessary throughout the season in order to keep the weed growth down. Just before pulling, the weeds should be well watered and the plants dug up by the means of a trowel or shovel, placed in pans and hauled immediately into the field where they are transplanted.

Preparation of the Fields for the Young Plants

There is probably no other vegetable with the exception of the onion which requires such careful and thorough preparation of the soil as celery, and unless the preparation is such that the weed growth is killed, and there is present a fine mulch, the young plants will have difficulty in starting. The first step in the preparation of the soil should be deep plowing in the fall, allowing the land to remain rough during the winter months up to a month or two before planting in the spring. The first operation in the spring is to replow the soil, turning under all weed growth and working the soil down to as fine a condition as possible. If there is sufficient moisture present the weeds will quickly rot, and after this the soil should be re-worked by the use of a disk, spring-tooth harrow or cultivator until the seed bed is very fine and the weed growth has been entirely done away with. The cultivator or harrow should be used over the field often enough so that the soil will be in this condition at seed time. Just previous to planting, the field should be marked off and furrows plowed three and one-half feet apart and from four to six inches deep, the exact depth depending upon the size of the plants and condition of the soil, especially regarding moisture. The plants are lifted from the seed bed and brought to the fields in pans, and planted in these furrows as quickly as possible. They are generally placed about six inches apart, and a little deeper than when they were growing in the seed bed.

Cultivation

As soon as the plants have started, the cultivation should begin. At this time the cultivator should be regulated so that the earth between the rows of the plants is thoroughly stirred, although care should be taken not to throw the earth on the young plants. As the season advances and the plants are taller the earth can be stirred closer each time. After the plants have been in the field about three weeks to a month the field should be "crowded," moving the surface soil away from the plants; thereby killing the weed growth immediately around them. If the celery has not grown too tall, the ridges are worked down by the use of a large roller, but if the plants have grown so tall that they would be injured by this treatment, these ridges are smoothed by the use of the cultivator. After the plants have grown 12 to 15 inches in height, the field is "split," which means the earth from the middles is drawn around them. Care should be taken not to put the soil too high around the plants for fear of injury. The object of "splitting" is to gradually encourage the plants to grow tall and straight instead of spreading out. The plants should be "split" a second time, just before banking, which aids in blanching.

Banking

This is the last field operation performed with the exception of harvesting. It requires considerable skill in order that this be done properly. The object of banking celery is to encourage long straight stalks and aid the celery to bleach. The exact time that the celery is banked depends upon the season of the year and the soil. Celery growing on heavy lands will not keep as long in the bank as when growing in sandy soils. If the weather is hot or moist or if the celery is not sufficiently matured, it will soon spoil if allowed to remain too long in the bank.

Many of the growers bank their celery two or three times, throwing the earth a little higher each time until at the last banking the earth is placed as high as possible on the plant, leaving only the tips of the stalks showing. Practically all the celery in California is banked with earth, although in the smaller market gardens celery is sometimes tied up by hand and wrapped in sacks. Some of the market gardeners blanch their celery by use of boards.

Harvesting

The celery is harvested by cutting the roots just below the surface of the ground. This is done on a large scale by the use of a special machine which straddles the rows. Many of the smaller growers do this with a shovel, hoe or with other hand implements. After it has been so cut the outside stalks are pulled off and the celery is packed in crates and ready for shipment.

Varieties

There are several varieties of celery grown in this state, the Golden Self-Blanching is by far the most popular, especially for eastern shipments. The market gardeners often prefer the White Plume, Giant Pascal or the Green Top variety for the local markets.

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General Agriculture

HOW TO INSURE A PAYING CROP OF SUGAR BEETS

Written for California Cultivator
By Percy L. Edwards

A FEW months ago there was a feeling among both the manufacturers and growers that next season's crop of sugar beets was an uncertain quantity. Following tariff changes a number of factories about the country closed their doors last season and others gave notice that after the present crop was cared for they too would likely suspend operations indefinitely. Farmers had come to realize that the sugar beet was one of their best paying crops and when, at the beginning of the contracting season last year, they were asked to grow the beets for a reduction in price they loyally agreed.

TRACTOR HANDLING THREE LOADS OF BEETS ON UP-TO-DATE DUMP.

War in Europe has brought about a radical change of conditions, and there is a great change of feeling among manufacturers and growers alike. The manufacturers, it is reported, are to go back to the old scale of prices to be paid for beets and with the present season's good returns from the beet fields, growers are enthusiastic for the future. The seed problem is working out satisfactorily and contracts are being renewed at this time and preparations made for the planting of next season's crop. From talk with manufacturers and growers the writer is able to say that the coming season will see every California beet sugar factory in operation and a much larger acreage of beets planted than ever before in the history of the industry on this coast.

The agricultural end of the industry is of special interest to the farmers of this state. Little attention has been given by the press generally to the agricultural work of the grower of sugar beets. Outside of agricultural journals, and but few of these offer the farmer aid in actual field operations, he receives but little advice and direction, except an occasional visit from the agriculturist representing a sugar company. This paper is intended as a help to farmers in selecting lands that shall produce the best results and in preparation of that land so as to insure what is called a "stand" of beets; that is the condition of the field when the young plants show above ground. Upon this showing of a good, or a poor "stand" depends the success or failure of the crop. If the stand is too irregular—too much space where no seed has germinated, the crop will not pay and the grower might as well know it at this time as to continue his expensive operations to the harvest time and then find it out. On the other hand, if the stand is well bunched and continuous, if properly handled, the crop is reasonably certain to be a paying one. It costs as much to produce a poor crop as it does to produce a good one. A good crop, as our observation leads us to assume at this stage of the beet culture in this country, should go 10 tons and over per acre.

There are many of the older growers of beets in this state who know how to select the fields for the beet crop. Indeed, there are many farmers known to the writer who have learned from experience a knowledge of beet culture equal in value to the information of any one. There are others who have not learned these lessons for different reasons; some are taking hold of the work for the first time.

The sandy loams found in the delta sections within the atmospheric influence of the ocean are the lands giving best assurance of good results at this time. Some of these lands, like those of Orange and Ventura Counties, run into a soil with a large proportion of clay. If these lands are so drained that water does not approach too near the surface, say three feet, these lands produce the best results. The writer has known fields of 100 and 200 acres go 20 and 28 tons to the acre. These lands are found within a few miles of the sea line. In the Los Alamitos country there is considerable of this land. Land within the influence of the sea's moisture laden currents are the most reliable for tonnage production and at the same time the sugar percentage is very satisfactory. No beet grower of many years experience needs to be told that in selecting fields that have for several years previously been used for corn or potatoes he is selecting the best land to prepare for his crop. This for two reasons; no farmer of any sense tries to raise a paying crop of corn or potatoes on any land but good land and crops like corn and potatoes are among the crops best cultivated. These reasons are good enough to be borne in mind by all who intend to raise sugar beets.

Grain lands are usually selected for sugar beet growing. Beets will rotate with grain very well. But while much of the so-called grain lands are highly productive, some are not. It is only the best that should be selected. When I say best, I mean only such lands as contain a fair amount of plant producing material. And do not make the mistake of believing that by heavy applications of manure at plowing time you can make this poor grain land yield a paying crop the first year. You will not get this result before the second season, especially if the manure is coarse with much straw. The other trouble with grain lands is that year after year they have been shallow plowed, and the soil that might produce the big crop has not been exposed to the chemical action of the atmosphere and therefore lacks vitality. For good results from these grain lands first used for sugar beet crops, the land should be plowed deep, say 14 to 18 inches, and the land permitted to lie just as left by the plow over the season. This land may be plowed in some sections after the harvest time and left over until the latter part of January and first of February. This is a good time for seeding sugar beets in Southern California, at least. In some sections planting begins as early as December.

In selecting land for beet growing where stubble is left at any considerable height, care must be taken to either plow it under deep enough to actually bury it or it should be removed from the field to prevent the obstruction to cultural operations. As the first cultural operation consists in driving a horse or team down through a field with rows of beets not over 18 or 20 inches apart and the beet plants barely an inch high, with a weeding cultivator, the necessity for having the field clean of obstructing material may be easily understood.

Above all do not select land for the beet crop that has a crop of obnoxious grass. You can not grow a paying crop on land that is befouled with Bermuda or Johnson grass. Do not listen to the man who says he has known a good crop of beets taken from a field covered with a growth of this grass. While it is true that there is compensation to the sugar beet grower who gets a poor crop of beets but who has by dint of hard work and considerable expense cleaned his land, it is a costly and unsatisfactory method of cropping. If you have not other available land for beet purposes, don't let anyone persuade you to grow beets. Wait until you have ready land that you are reasonably sure will produce a good crop of corn or potaoes, then seed this land to sugar beets. Finally, select the best land you have on the farm for the sugar beet crop.

Preparation of the Seed Bed

The experience of one who has planted and cultivated the sugar beet for the past 15 years and cared for the beet from seeding to harvest, followed it through the extraction of the sweet juices to the warehouse with its wonderful display of finished product, the lesson of most importance in preparing for growing a crop is thoroughness. Plow deep. If your land is not used to being plowed deep, then plow in the early fall and plow deep. Let the land lie through the winter until early spring if possible. O course you wish to get the advantage of the rains on your young crop. Some study of weather conditions will help you to determine how long to wait before seeding. If a crop of weeds is well started on the plowed field use the disk to chop them up. Heavy and thorough harrowing to pulverize the mold should follow. With land plowed early and left standing through the winter there is not apt to be any lumpy condition of the soil after the thorough disking and harrowing. But if there is a lumpy condition a roller should be run over the field and then a light harrowing follow. This harrowing should leave the surface smooth like a garden. If there is any amount of foul stuff on the surface it should be removed as it will impede the operation of the drill in seeding and obstruct the cultivator later on. Care should be taken not to plow when the land is not in fit condition, aspecially when the plowing precedes the planting closely. If the land is plowed lumpy the trouble to put it in proper shape is increased materially. It must be pulverized. I think that as a rule all fields plowed just before planting should be rolled and thoroughly pulverized before being subjected to a final light harrowing. If the soil is light in texture the seed may be planted without the harrowing. This condition makes the drilling in of the seed an easier and more even job when completed. The advisability of running the rows straight is understood by all who have had experience and will be apparent to anyone who has cultivated corn.

What is needed in this preparation of the soil for the beet seed is thoroughness more than anything else. After you think you have gone over your field with the harrow times enough, then go over it once more. In this way you are taking out insurance on your crop returns. In drilling in the seed be careful not to drill too deep. In a dry time you may drill in seed a little deeper, but as a rule one inch, or just enough soil to cover the seed, is sufficient. About 15 pounds to the acre is enough seed well planted. The drill will be set for rows 18 or 20 inches apart. Do not ride your drill, walk behind it and watch the feed closely. The feed sometimes clogs and you do not learn of your loss until it is too late. One other suggestion is to give the field a thorough wetting before plowing, if the season is dry, then it must stand until in good condition for plowing.

South African farmers are appealed to through Leaflet No. 13, 1914, of the Union department of agriculture in regard to the importance of selecting their corn for planting not from the crib or storehouse, as is usually done, but from the plant itself in the field. Ears should be selected, it is urged, from plants upright in growth, of normal size, with ears correctly placed, and the plants should not show susceptibility to rust, neither should there be any marked stooling habit. Ears should not be selected from near the sides or edges of the field, as these will be more liable to be crossed. The ears should be kept separate and should be stored away from the other ears to undergo a further selection, as time will permit, being selected for the various characteristics already enumerated.

In setting up any sort of machinery, big or little, see that it is level. Coal oil stoves have been known to fail because of not being level. If you have no level, pour water in a shallow pan

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Rural Californian combined with the California Cultivator

A Journal of Horticulture and Agriculture

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Thursday, Dec. 3, 1914

OUR ADVERTISERS RELIABLE

We guarantee our subscribers against loss through dishonesty of any advertiser in the Cultivator. We do not attempt, however, to adjust trifling differences between subscribers and honest, responsible advertisers, nor will we pay the debts of honest bankrupts. Notice of complaint must be sent us within 30 days from date of the transaction, and the subscriber must have mentioned the Cultivator when writing the advertiser.

NOT SO DRY

As we go to press the first general coast storm is giving the much needed rain. The precipitation varies from an inch and a half to practically nothing in some sections. Predictions are for a continuance of the storm, and it is to be hoped that three or four inches will be secured before it ends. The most satisfactory feature of the storm is that in the citrus sections frost fighters were driven from the orchards by the rain. Warning was given from the weather office on Monday night to prepare for possible frosts on Tuesday morning, but before Tuesday morning the rain was falling. Many predictions have been made that we might expect a dry and cold winter; we trust this is promise of something better.

FOOT AND MOUTH RUMOR

Sensational reports were at one time circulated over the east in effect that one of the warring nations of Europe, anxious to prevent shipment of American meats to its enemies, had employed agents to visit certain sections of this country and inoculate livestock with the virus of the foot and mouth disease. The department of agriculture thought seriously enough of this rumor to trace it down, and it announces that it was simply a sensational dream of an irresponsible person at Lincoln, Nebraska. The fearful rapidity with which this disease spread before the quarantine was declared might give some little color to such a rumor, but it is unthinkable that any person could be secured to do such an act, which would be of so little benefit to anyone and of such immense damage to many.

AUTOS HELPING

Auto licenses brought to this country during the year 1913 over $8,000,000 which were used in road building. The total expenditure, however, for good roads in this country was something in excess of $200,000,000. In building of good roads we are glad to see California well up in the lead. As to our autos, they have done their share during the last year, that is, in a general way, though it is maintained that some machines have not paid in proportion to their usage. However, announcement is made that during 1915 licenses will be collected on a different basis, and machines which have during the past year paid five dollars will now be compelled to pay ten or even fifteen. It is estimated that next January the registration in this state will exceed 125,000.

PARCEL POST INCREASING

Before the installation of parcel post, anticipation of its great value ran so high that disappointment was felt by many because of its limitations. However, various changes have been made and a closer study has been made of the practical side, and its use and usefulness is materially increasing. Also various containers have been manufactured to aid in the shipping of produce. We believe that before many years an immense outlet for California's output will be secured through this feature of the postal service. California suffers a handicap in that practically all her parcel post operations are in the seventh zone and therefore she is obliged to pay the highest rate. But then many of our products are high-priced, and the long profits demanded by eastern retailers makes it necessary to study this feature of marketing. Extended investigation should be made so as to avoid the mistakes made by those who have been testing out the service.

TREES ALONG HIGHWAY

Michigan has inaugurated a movement to secure more general planting of fruit trees along the highways of that state. The supervisors of the various counties are appropriating thousands of dollars for the planting of these trees and different fruit growers' associations are aiding the movement. The plan is as yet in the making, for committees appointed are working on plans of utilizing the lands bordering the highways, both for beauty and for utility. One idea is that the beauty of the rural roads will be greatly increased, and more, that the revenue received from these fruit trees will aid in the upkeep of the roads.

We do not know that this plan would appeal to Californians, that is the utility side of it, though it must be confessed that there are some fruit trees like the olive and various nut trees and many other fruits which are most beautiful. The principal objection raised to the fruit trees is that their use would encourage marauders to take most of the fruit before their legitimate owners could get any advantages from it. Even if this were true, we don't see where the community is any the worse off than with purely ornamentals, provided the fruit or nuts are gathered without injury to the trees. The use of fruit trees is not so important, however, as that some kind of trees shall be planted in the parking along all country roads. One of our hardiest and most rapid growers, and, as it grows older, most beautiful trees, is the common blue gum. It has one serious drawback, however, and that is that its demand for nourishment and moisture make it encroach on adjoining lands.

PLANTING SUGAR BEETS

More general planting of sugar beet seed will be engaged in than was anticipated soon after the declaration of war. Practically every sugar beet section of California has received seed and will be worked to the limit. This is of course for the season of 1915. Announcement has been made that in the spring of 1916 the factories will nearly all close, but we trust that some arrangements will be made or that conditions will change so that all California's factories will operate.

The American people send abroad every year more than $100,000,000 to pay for sugar. It is time something was done to keep this vast sum of money at home. It would require millions of acres to produce that amount of sugar; those acres should be made productive.

STOP THE DREDGING

The total value of gold mines in California during 1913 was $20,406,958. Of this amount slightly over $8,000,000 was secured by gold dredging. Since the commencement of gold dredging in California 15 years ago the gold from this source has amounted to $63,505,485.

Probably some of this land had no agricultural value, but when the $8,000,000 is compared with some of our crops, for example, citrus fruits, and gold dredging is shown to bring to the state only about one-fourth as much as one year's citrus fruit returns, while the citrus fruit culture has only benefited the land and the dredging has destroyed it, the contrast is apparent.

Every session of the state legislature for many years has had presented to it a bill to control gold dredging. The aim is to stop the destruction of valuable agricultural lands, but each bill has been opposed by the powerful dredging interests so effectively that no measure has yet passed. Some of these lands are underlaid with thousands of dollars worth of placer gold, and when they can be bought for a few hundred dollars per acre the temptation is too great, and large companies have been formed and immense quantities of gold secured. Where these lands were in gravel beds or where it was not possible to grow orchards or other crops, there can be no objection to the dredging companies using them as they see fit. But for the sake of a profit of one year to destroy for all time productive lands is unwise as to our own interests as well as those of future generations. Some of these lands in Sacramento, Butte and other counties have been changed from productive acres to great boulder heaps. It was at one time claimed that these piles of boulders could be made productive at least to the extent of growing eucalyptus trees, but as all of the soil particles have been covered with from 30 to 50 feet of gravel and boulders of all sizes up to a ton, it is hard to imagine any eucalyptus or other tree growing there. It is asserted that while more expensive it is possible to return these lands to practically their original condition as the dredgers finish their work. If such procedure were followed there could be no objection, and the state would then be enriched by the gold secured and the ability of the land to produce golden crops to follow for all time to come, but as the law now remains the dredging and destruction of these valuable lands is increasing every year. It is time for our legislature to get busy.

Agricultural Notes

India raises about one-fourth of the cane sugar of the world's supply.

Business interests of Florida generally are donating funds for control of citrus canker.

Experiments are being made in Cuba in rice culture and some varieties have been grown very successfully.

Potato growers of Florida are organizing an exchange to buy supplies and market the product of members.

Cuban citrus growers are urging the government to establish a quarantine against diseased citrus plants, especially from southern United States, also to reduce duties on insecticides and fungicides.

Large plantings of Washington Navels and Valencias are being made in New South Wales. The growers will be able to place their fruit in the eastern ports of the United States in the middle of the summer season.

The Transvaal orange grower can ship midsummer oranges to Southampton, 7,000 miles, for a total cost of 39.5 cents per box, California size. These can be reshipped at the rate of 25 or 30 cents per box to New York harbor.

The citrus canker fighters of Dade County, Florida, are asking the nurserymen of the state not to make shipments of nursery stock into that section for the present. Some of the large nurseries have agreed not to make such shipments, even to fill orders.

Spanish orange growers are seeking in the United States an outlet for their fruit which cannot on account of war conditions be disposed of in Europe as formerly. Three commissioners appointed by the government left Cadiz on the last day of September and have been investigating market possibilities in New York, Boston and other centers.

Two refrigerator carloads of eggs have been successfully shipped from Iowa to New York city in cars fitted with a simple shock absorber recently patented. It is a disengaged floor and ends. The floor is on rollers so that it can move longitudinally about five inches. The shock absorber at the ends consists simply of coils of light wire placed between timber frames, the outer of which is secured to the end of the car.

The Onion Growers' Association of Antigua, British West Indies, is handling, packing, shipping and selling cooperatively a very large proportion of the onion crop of the island and has secured for the produce of Antigua a degree of recognition for uniformity and excellence in quality which is proving of very great service to the industry. It is in contemplation to extend this work with other vegetable products and fruits.

"The most recent news from the beet sugar district of Russia, including Poland," says "Sugar," is "that the effect of the war on the sugar factories has been very slight indeed, and the owners, it is averred, judging from present labor available, do not contemplate much, if any, difficulty in handling the average quantity of beet root that may come into their hands. If their judgment of the situation is correct, it may only be said that in respect to labor, both skilled and unskilled, the Russian sugar industry is particularly fortunate."

Agricultural News Notes of the Pacific Coast

Northern California

A great many blooded Berkshires have been sold from hog ranches of Yolo County.

Citrons and pie melons have been grown quite extensively the past year in Napa County.

The Amador-El Dorado Stockmen's Association held its annual meeting at Placerville last Saturday.

Placer County is taking steps to organize a farm bureau and, in fact, four units have already been organized.

The entomological station has been established at Placerville, its work being largely on the El Dorado national forest.

The creameries of Lassen and Modoc Counties are reported to be crowded to their limit in handling the output.

Butte County orange growers feel that the new ruling of the department regarding acid and sugar content of oranges is too rigid.

A tract of land near Oroville, comprising 780 acres, has been sold and the planting of olives upon the property will begin at once.

Over $100,000 worth of almonds was produced this year by Capay Valley (Yolo County) almond growers, according to an estimate given by a conservative rancher.

A meeting was held at the chamber of commerce at Napa last week by the Napa Grange, at which control of dairies and functions of the state dairy bureau were discussed.

Yolo County reports large quantities of barley sold at satisfactory prices, but it is also estimated that more than three-fourths of the crop of that county is yet to be shipped.

The California Development Board will take up the matter of aiding Belgians to come to California and to that end will present the matter to the state legislature as soon as convenient.

At the annual convention of the farmers' union at San Jose the following officers were elected: D. M. Utter, Campbell, president; G. R. Lynch, Morgan Hill, vice-president; Fred Millard, Los Gatos, secretary-treasurer; executive committee—Fred J. Currier, Cupertino; H. C. Hagan, Gilroy; Massey Thomas, Gilroy; J. E. Parrish, Arroyo Grande; A. Kammerer, San Jose. The executive committee was empowered to establish a commission house in San Francisco similar to that in operation in Los Angeles.

At a meeting of the board of directors of the California Grape Protective Association a committee of five was named to prepare legislative suggestions to be submitted at a mass meeting of grape growers and wine makers, to be held December 19, at San Francisco. The committee consists of Frank T. Swett, chairman, representing the grape growers of central California; C. E. Humbert, representing the dry wine section; F. A. Lucas, representing the growers of Southern California; Burton A. Towne, representing the growers of the San Joaquin, and Theodore Bell, representing San Francisco.

Central California

Oranges are being picked in the Oakdale section of Stanislaus County.

A number of Visalia farmers will experiment with planting sugar cane this year.

Stanislaus County is holding its annual poultry show in Modesto December 2-5.

An Oakdale olive grower reports the offer of an olive buyer to contract all his olives for 20 years at $225 per ton.

The Associated Raisin Company reports the receipt of over $300 daily for the $1.00 Christmas packages of raisins.

Seven hundred and eighty tons of raisins from 680 acres of vineyard is the record made by the university farm near Fresno.

Farm Expert Amundsen of Fresno County is instructing peach growers in best methods of pruning, spraying and other problems.

The second annual show of the Porterville Poultry and Pet Stock Association will be held at Porterville December 15-17.

An outbreak of hog cholera in the Pajaro Valley has been practically stamped out, it is claimed, through general use of vaccine.

A farmers' institute was held in Greenfield, Monterey County, November 27-28. The local grange served a dinner on November 28.

The meeting of the farmers' institute held at Merced last week was devoted to a discussion of the hog industry of the San Joaquin Valley.

The second annual poultry show of the Porterville Poultry and Pet Stock Association will be held December 15-17. E. D. Fawcett is show manager.

Fumigation operations in the citrus orchards of Tulare County have ceased. According to the announcement of County Horticultural Commissioner Collins, the fight against the soft gray scale which has been waged during the past season has been most effective.

The recently organized Central Stockmen's Association is offering a reward of $1000 for the arrest and conviction of any cattle thief. The membership of the association is made up of cattlemen of Kern, Kings, Fresno, Monterey, San Luis Obispo and Santa Barbara Counties.

Chester H. Rowell, editor of the Fresno Republican and a member of the state commission of the Panama-Pacific International Exposition, has been appointed a member of the board of regents of the University of California, to fill the vacancy caused by the death of Frederick W. Dohrman of San Francisco.

Plans to establish a commission house and selling agency, operated by and for the benefit of the California farmer, were made by the Farmers' Educational and Cooperative Union, which held its annual meeting at San Jose November 12. The following officers were elected: President, D. M. Utter, Campbell; vice president, G. R. Lynch, Morgan Hill; secretary-treasurer, Fred Millard, Los Gatos.

Southern California

Santa Barbara County will be represented at the fifth national orange show to be held in February.

Colton, San Bernardino County, is taking steps for protection against the storm waters of Lytle Creek.

The Hemet Orange Growers' Association shipped out its first carload of oranges the middle of the month.

Bloomington, San Bernardino County, has its largest crop of olives, and the olive mill is running full capacity.

Blythe, Riverside County, will hold the Palo Verde Valley fair December 5. There will be exhibits of agricultural products.

Citrus growers of the Yucaipa Valley are discussing the advisability of inspection of all citrus stock shipped to that section.

General Manager Powell of the California Fruit Growers' Exchange has placed the 1914-15 output of citrus fruit at 45,000 cars.

The walnut crop of the Hemet Valley, it is estimated, will net the growers $12,000. It is thought the output will be doubled within the next three years.

Villa Park, Orange County, reports navels coloring up rapidly. The fruit is about two weeks in advance of last season. Shipments are expected to begin about the middle of January.

Five hundred and forty thousand dollars has been received by walnut growers of the Whittier district, including the La Habra, Los Nietos and Ranchito sections, for the 1914 walnut crop.

Carl A. Johnson, manager of the Holly Sugar Company in Orange County, announces that his company has enough beet seed in its warehouses today to supply the demand for the 1915 crop.

Apricot growers of Orange County are still holding between 400 and 500 tons of dried cots. About 15 tons have been bought up within the past two weeks and the growers are feeling somewhat encouraged.

Experimental work of the California Citrus Experimental Station, with practical methods for orchardists to treat diseases and other troubles encountered, and cultural methods for the handling of orchard properties, will be an interesting feature of the coming orange show.

By an agreement on the part of the Southern Pacific Company to part with its holdings in, and claims against, the California Development Company the irrigation controversy of the Imperial Valley is nearing an end. If negotiations with other creditors are carried through the receiver for the company will have $275,000 to aid in settling with claimants.

A clause in new beet contracts offered by sugar factories of Orange County provides that if the average net selling price of beet sugar received by the beet sugar factories of Southern California shall equal or exceed four and one-half cents a pound during the period between July 1, 1915, and May 1, 1916, the growers will receive a bonus of 50 cents a ton.

The Coast

Oregon is shipping apples to Siberia.

Frozen Chinese eggs have been sold at Seattle as fresh eastern stock.

Chandler, Arizona, turkey raisers sold their Thanksgiving output at 20 cents.

Rabbit breeders of Spokane, Washington, are planning for an annual show.

The Northwest Livestock show was held at Lewiston, Idaho, November 30.

The fourth annual Irrigation Congress of Oregon will be held at Portland, Jan. 7-9.

The third annual of the Arizona State Poultry Association will be held at Phoenix, Dec. 9-12.

The Washington committee on irrigated and irrigible lands will meet at North Yakima December 16.

A number of Washington farmers have orders for Thanksgiving turkeys to be shipped by parcel post.

The Fruit Growers' Exchange of Hood River, Oregon, has closed its pools on the season's pear crop.

The seventh National Apple Show was held recently at Spokane, Washington. The attendance was immense.

The Arizona commission of agriculture and horticulture has ruled that all citrus stock not grown in that state is barred.

Nearly 5000 carloads of fruit have been shipped from Wenatchee, Washington, this season, the greater portion being apples.

One hundred and eighty-five thousand acres of the Crow Indian reservation in western Montana has been thrown open to homesteaders.

Governor Hunt of Arizona has proclaimed a quarantine against incoming cattle from all states lying east and north of the state of Texas.

A $25,000 herd of Holstein cattle is being held in isolation pens at Spokane. They came from a foot and mouth disease infected state.

The Fruit Growers' Exchange of Hood River, Oregon, has closed its season's work. Extra fancy stock netted from $1.10 per box to as high as $1.75.

Governor West of Oregon has issued a proclamation preventing the importation into that state of cattle from states where foot and mouth disease is prevalent.

Great interest is being taken by farmers of Willcox and vicinity in Arizona in the demonstration train which has planned for a trip during the first two weeks of the month.

At the National Apple Show and Fruit Products' Congress held in Spokane during all of last week a feature of especial interest was the demonstrations given to show 219 ways in which the apple may be prepared in appetizing dishes. The domestic science departments of the Washington state college, the university of Idaho and other educational institutions of the two states joined in these demonstrations.

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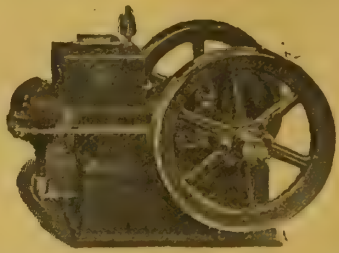

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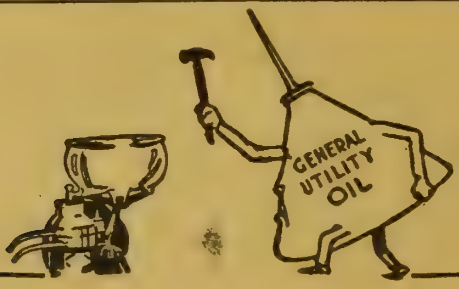

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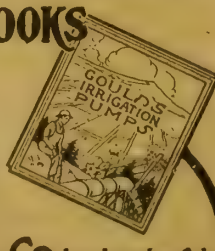

228-238 Central Ave. SMITH-BOOTH-USHER CO. Los Angeles, Cal.

Live Stock and Dairy

THE RUNT PIG

Written for California Cultivator by Sacramento Valley Contributor.

In almost every litter of pigs there is a runt. Just what to do with runts is a problem that confronts every hog raiser. Ordinarily these undersized, slow growing little fellows are left to shift for themselves along with the larger ones in the litter and they become more pronounced runts all the time.

Some hog growers say "knock them in the head and get rid of them," but that is a policy that many of us do not approve. Instead, we believe it is best in every way, and a paying proposition, to give runt pigs a show and make them make the greatest possible return for the care and feed invested in them.

Small undersized pigs should have all of the feed they can eat, and it should be a combination of everything on the place that is good for hogs. If milk of any kind is available a liberal portion should go to the pigs, then table scraps or swill, soaked barley, soaked corn, alfalfa pasture or green cut alfalfa, a little oil meal; as many as possible of these things can profitably be included in the ration.

There should be a separate pen joined to the one in which the sows or other hogs are kept, but so fixed that only the small pigs get into the place where they are fed. This can be done by raising a panel a few inches off the ground so that only the small pigs can get under. In this small pig feed place all of the litter will feed as long as they are getting milk from the sows, and the way to insure the runts getting all that they should is to have ample trough room for all of the pigs to be fed there and feed plenty so that the runts may keep on feeding after the others have finished, if they want to.

After the litters are weaned it is a good plan to place the runts and small pigs in a pen by themselves or shift them into a pen of smaller pigs where they can have access to all of the good feed they can eat.

Lice, ticks, scurf and all of the ills that hogs are heir to seem to find the unthrifty pig the most attractive "bait." Keep a close watch on these young pigs, and whether there seems to be anything the matter with them or not dip them occasionally. This can be easily done by mixing a tub of some good dip, using it according to directions, holding the pigs by hind and forelegs and giving them a "ducking" once or twice, making sure to get them good and wet all over.

All kinds of stock pay well for intelligent care and attention, even the runt pig.

PROGRESS OF THE FOOT-AND-MOUTH FIGHT

The order signed by the secretary of agriculture lifting the quarantine against Canada on account of the foot-and-mouth disease is regarded by the authorities here as encouraging evidence that they are "on the outside of the disease." This means that there are grounds for the belief that quarantines already declared have been sufficient to stop the movement of infected cattle and that the disease can now be held within the limits of the areas already quarantined. It is quite possible, of course, that sporadic cases may be found in one or two more states, but it is hoped that even if this does occur the damage will not be serious.

Another cause for encouragement is the fact that although a shipment of infected cattle reached Spokane, Washington, some days ago, no new cases have since been reported from that state. This is taken to mean that the diseased cattle were killed and buried before they had had an opportunity to spread the disease; in consequence, it has not been considered necessary to quarantine Washington.

At the present time the states most seriously affected are Ohio, Illinois, Indiana and Pennsylvania. These are all feeding states; that is, states in which farmers make a practice of buying cattle and swine and finishing them for the market. The quarantines, which not only prohibit the export and import of live stock from infected states, but also the import of cattle from uninfected areas for any purpose except immediate slaughter, interfere, of course, with this business. This implies considerable loss to the farmer in addition to the expense incurred by the government in the slaughter of the actually infected herds.

Outside of this belt the three New England states of Connecticut, Rhode Island, and Massachusetts are perhaps the subject of the greatest concern. These are small, densely-populated states. Although the actual number of cattle already infected is comparatively small, it will probably be some time before any of the quarantines can be lifted in this region.

On the other hand, the situation in New York seems to be fairly well in hand. The greatest single loss has been that of a dairy herd of 289 cattle which was found infected in the Borough of Queens on Long Island. The entire herd had to be slaughtered. Its value was appraised at approximately $22,500. The Buffalo stockyards have also been infected, and some cases have been found in Erie County in the immediate vicinity. Otherwise, the disease has been confined to one or two sections of the state and does not appear to be spreading. In Delaware also, the disease has been confined to Wilmington; and in New Jersey, to Hudson County. A portion, at least of both these states, it is hoped may be released from quarantine at an early date.

The greatest encouragement of all, however, is probably found in Michigan. The outbreak originated in Michigan, and it first spread fast. Now, however, it is believed that all infected stock have been put under ground and the state it is hoped is really clean. To make certain of this, however, a farm-to-farm inspection is now being made in all regions previously infected. In this connection it is pointed out that 18 shipments of diseased stock were traced from Chicago

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Louden Stalls and Stanchions are built of the finest, high-carbon tubular steel and are exceptionally strong, easily installed and cost no more than wood.

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This meal has been known as the complete milk substitute since the year 1800. Very easily prepared. It prevents scouring promotes a strong rapid growth and makes a better cow.

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into Michigan, and that as far as is known now, all of the animals in these shipments were slaughtered and buried without their having communicated the disease to a single animal on adjacent farms.

Kentucky also, it is believed, will soon be free from quarantine. The disease has appeared in only three counties and considerable progress has been made in ascertaining that the rest of the state is clear of the infection. In Iowa and Wisconsin the infected areas appear to be definitely defined, and portions of these states may soon be released from quarantine. The difficulty in releasing portions of the state only lies in the fact that the state authorities must then guard closely the line that separates the quarantined from the unquarantined portions. At best, this is a difficult undertaking, and unless it is absolutely certain that the separation would be rigidly enforced, the federal authorities consider that the only safe method is to maintain state boundaries as the limits of the quarantine.

In Montana the situation is still a little in doubt. In the first place, a shipment of infected cattle was intercepted at Glendive. Furthermore, another outbreak has occurred near Terry, the extent of which has not yet been definitely determined, though it is probably confined to two or three counties.

Although the spread of the disease into areas previously uninfected seems to have been in a great measure checked, it is estimated that it will take at least six months to stamp out all traces of the infection. In this work, it will be of great assistance if snow comes quickly to cover the ground. Quarantines, it is announced, of whole or parts of states will be lifted as rapidly as safety permits.

BUTTER MAKERS CONTEST

A valuable work in improving butter making methods in California is being done by the University of California through its periodical, "Educational Butter-Scoring Contests," conducted by Professor L. M. Davis. The fifth entry for 1914, scored in San Francisco last week by T. J. Harris, official inspector of the San Francisco Wholesale Dairy Produce Exchange and Professor Davis and Instructor H. S. Baird of the University dairy division, showed the following scores achieved by some of the state's most skilful butter makers:

Peter Peterson, Valley Flower Co'op. Creamery, Ferndale	94
C. G. Plunkett, Visalia Creamery, Visalia	93½
J. N. Jensen, Visalia Coop. Creamery, Visalia	93
J. Clausem, Riverdale Cooperative Creamery, Riverdale	92½
Glenn Decow, Mission Creamery, Perris	92½
Ira D. Whitaker, Stanislaus Creamery Co., Modesto	92½
N. Christensen, Dairymen's Cooperative Creamery, Tulare	92
J. C. Phillips, Delta Creamery, Imperial	92
P. Lernasconi, Harmony Valley Creamery, Cayucos	91½
F. H. Worthington, Holtville Cooperative Creamery, Holtville	91½
C. A. Johnson, Grace Brothers' Creamery, Santa Rosa	91½
Simon Koppes, Montague Creamery, Montague	91½
Wm. Oelkers, Mindin Butter Mfg. Co., Mindin, Nev.	91½
A. L. Bailey, Ceres Creamery, Ceres	91
Ed. Hooper, Spreckels Market Creamery, San Francisco	90½

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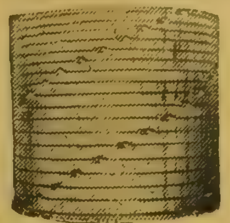

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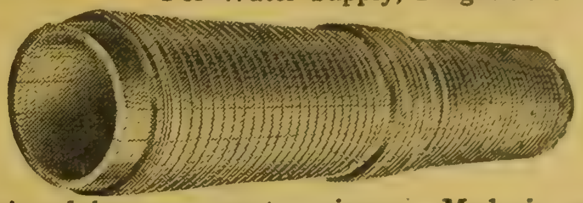

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"It might be of interest to you to know the results of feeding Larrowe's Dried Beet Pulp at our dairy. We are milking 167 cows and are feeding 1200 pounds of pulp per day about 7 pounds to the animal. The pulp is fed in addition to a grain ration of 5 pounds per animal, together with all the alfalfa hay they will eat. As stated above, the grain and hay is our regular ration, and the beet pulp increased our milk yield almost 500 pounds per day. The increase was during the stormiest and most uncomfortable weather of last winter. When we were getting these results from this method of feeding, our supply of beet pulp was suddenly exhausted and for several days we were unable to get any more because of the washouts on the railroad. Our milk output almost immediately fell off the amount of increase mentioned, thus furnishing absolute proof that the pulp is to be given credit for our unusual milk yield, which has again attained the maximum since we obtained a fresh supply upon the arrival of the delayed carload. We unhesitatingly recommend beet pulp to any and all dairymen who feed for results."

Be sure you get LARROWE'S Dried Beet Pulp. It is uniform in color; never blackened or burned.

Larrowe's Dried Beet Pulp is clean, healthful, succulent, and will not only increase your milk yield, but also keep your stock in better health and condition.

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COWS—HEIFERS Fresh and Coming Fresh—YEARLINGS—HEIFER CALVES and BULLS

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They Please the Eye and Fill the Pail. The calves will be worth more than you pay for the cows.

GREAT SEED FOR FOUNDATION HERDS

SEE those splendid Dairy Cows with their Sons—Daughters—Grandsons and Granddaughters.

SEE their grand dairy type—WORKERS BRED FOR BUTTER—Several now with Records.

SEE those excellent Yearlings and Calves that will DOUBLE IN VALUE within a year.

SEE the females that are bred to that excellent SON of the WORLD'S RECORD DAUGHTER of the great King Segis.

SEE SEGIS OAK HOMESTEAD FOBES, a proven Wisconsin sire that was purchased at a long price for this sale. His dam made 781 pounds BUTTER from 17541 pounds MILK in one year. His seven nearest dams have average seven-day Butter Records of 27.6 pounds. His seven nearest sires have 304 tested daughters. Segis Oak Homestead Fobes and 16 of his Sons and Daughters are SPECIAL ATTRACTIONS in This Sale.

SEE JUDGE HENGERVELD PAUL WAYNE and JUDGE HENGERVELD JOHANNA, promising young Eastern Bred sires, whose half-sister has just broken the World's Record, making 1129 pounds BUTTER from 22897 pounds MILK in one year. WORLD'S CHAMPION SENIOR, 3 YEARS OLD. Many Breeders owe their Fame and Fortune to ONE GOOD SIRE—What is this kind worth to you?

BUYERS HAVE NO REGRETS—Holsteins that I SOLD in my June Sale are making BIG MONEY for the PURCHASERS. Some have been resold at 100 per cent Profit. If you are in the Dairy and Breeding Business for PROFIT—Start at the TOP with some of this GOOD BLOOD. I offer these animals on their MERITS—I believe they will be appreciated.

You are Cordially Invited and Urged to inspect the stock before the Sale.

REMEMBER the Date—SATURDAY, December 12, 1914.

GEO. A. SMITH, Corcoran, Cal.

university farm at Davis. When the new term opens there in January, an influx of new farm school students is expected, while also a large number of students from the four-year course in the college of agriculture will go up from Berkeley to Davis to spend a half year at the university farm.

ANALYSIS OF STRAW

We have had several requests for feeding values of various straws. We requested information from M. E. Jaffa, professor of nutrition of the state university, and he sends us the following analysis. Regarding the one sample of lima bean straw which analyzes so high in protein Professor Jaffa says: "It will be noticed that one of the analyses shows 10 per cent of protein. This was due to the fact that while it was called lima bean straw it was not what one would call well-thrashed straw."

Analysis of Straw—Pea, Lima Bean, Etc.

	Water. Pct.	Protein. Pct.	Fat. Pct.	Carbo-hydrates. Pct.	Crude Fiber. Pct.	Ash. Pct.
Lima Bean Straw	11.00	5.78	1.94	47.20	26.13	7.95
Lima Bean Straw	14.00	5.22	.74	39.60	36.14	4.30
Lima Bean Straw	10.00	10.72	1.92	46.66	21.14	9.56
Pea Straw	20.89	5.91	1.97	37.65	25.25	8.33
Pea Straw	13.60	9.00	1.60	33.70	35.50	6.60
Wheat Straw	9.60	3.40	1.30	43.40	38.10	4.20
Rye Straw	7.10	3.00	1.20	46.60	38.90	3.20
Oat Straw	9.20	4.00	2.30	42.40	37.00	5.10
Barley Straw	14.20	3.50	1.50	39.00	36.00	5.70

ACORN DISEASE

Farmers whose pastures include oak groves will do well to fence off the oak trees, for acorns are responsible each year for the death of many head of young stock.

Young cattle, particularly those under 18 months of age, according to F. B. Hadley, veterinarian of the College of Agriculture, University of Wisconsin, are most subject to acorn poisoning. Sheep and hogs, apparently, are not affected even if they eat large quantities of the acorns, and mature cows seldom die from eating acorns, but their milk flow is usually diminished when feeding upon pastures in which acorns are available.

Symptoms of acorn poisoning may not be seen until a fortnight after the acorns have been eaten. Then the animals become constipated, lose their appetites and cease to chew their cuds. In the advanced stages intestinal irritation and diarrhoea may set in and continue until the animals die.

As but little can be done in the way of treatment, it is all the more important that care be taken to prevent cattle from feeding on acorns. Half pound doses of common baking soda dissolved in water and given three times a day are useful in overcoming the tannic acid of the acorns, which is thought to be the poison responsible for this trouble.

PUTS END TO "ALFALFA-TASTE"

Does your butter taste of alfalfa? Then see to it that your butter maker pasteurizes his cream, and there'll be no more "feed flavor."

Pasteurizing pays declares L. M. Davis, assistant professor of dairy industry in the University of California. Cream is pasteurized by heating it to 145 degrees for 20 minutes. This not only helps the flavor but protects the public by killing any germs of disease which might find their way into milk, from tubercular cows or milkers with diphtheria or typhoid.

The University of California was one of the pioneers in California in pasteurizing cream for butter making. It introduced the method some years ago at the university farm creamery at Davis, and ever since has issued its butter under a label stating that it is "guaranteed under the pure food and drugs act as made from efficiently pasteurized cream." Now this practice of pasteurizing has spread widely through California.

ANOTHER WORLD'S RECORD BROKEN

The Holstein-Friesian cow, Duchess Hengerveld Korndyke, has broken the world's record for butter production in the senior three-year-old class of the semi-official yearly division, by producing in 365 consecutive days 1129.2 pounds butter from 22,897 pounds of milk. She freshened at the age of 3 years, 9 months, 19 days. She is now the world's champion senior three-year-old. Her brother, John Hengerveld Paul Wayne, is owned by Geo. A. Smith, Corcoran.

CONCRETE LINING

A bulletin of particular interest to irrigationists is No. 126 of the United States department of agriculture. Though it is in the professional paper class it has practical interest for all irrigators. It is by Samuel Fortier, chief of irrigation investigations and has to do with concrete lining as applied to irrigation canals. There are many half-tone illustrations taken from California and other Pacific Coast irrigation systems.

FINE HOLSTEINS

As the time for Geo. A. Smith's Holstein sale draws near it may interest those of your readers who are in the market for pure-bred Holsteins to read something of these cattle outside of the advertising columns.

Mr. Smith recently purchased the writer's entire herd, and while I will not go into detail as to individual breeding, I will call attention to the great sires that were the foundation of the herd, and a glance at the catalogue will confirm what I write. De Kol Burke, the sire of our great California cow, Riverside Sadie De Kol Burke, was one of them. Homestead, Jr. De Kol, sire of the world's record butter cow, Grace Fayne 2nd Homestead, 35.55 pounds butter in seven days, was another. There was also Duchess' Ormsby Piebe Burke, a son of the high-testing Duchess' Ormsby Piebe De Kol Burke with his long list of high-testing daughters, and last but not least, the great King Segis, who is represented by a grandson who has a pedigree worth considering, and nine daughters in the sale.

Another item that is fully as important as breeding in regard to the herd sold Mr. Smith is the fact that the cattle were always kept under sanitary conditions, and they are all healthy and free from tuberculosis—a case has never been found in my herd.—N. E. Mulick, Willows.

ABSORBINE
TRADE MARK REG. U.S. PAT. OFF.

will reduce inflamed, swollen Joints, Sprains, Bruises, Soft Bunches; Heals Boils, Poll Evil, Quittor, Fistula, or any unhealthy sore quickly as it is a positive antiseptic and germicide. Pleasant to use; does not blister under bandage or remove the hair, and you can work the horse. $2.00 per bottle, delivered. Book 7 K free.

W. F. YOUNG, P. D. F., 244 Temple St., Springfield, Mass.

Thoroughbred Poland China Swine
High Grade Stock of Best Strains.
Young Stock For Sale
M. BASSETT Hanford, Cal

For Sale:- REGISTERED JERSEY CATTLLE. Both Island and American Types. J. D. Huston. Farm address, Imperial, Cal. Home address 1725 W. Adams Los Angeles

December Photo Contest

SUCH an attractive home scene has been submitted in the contest for this month that it takes precedence over many other photos of farm pets and farm animals. Almost as many photos were submitted for this contest as for that of November and that was a record-maker.

A TYPICAL CALIFORNIA RURAL HOME.
First Prize Photo by Miss E. S. Smith, Nordhoff.

The first prize winner is a most attractive illustration of a home which is typical of many in rural sections of California. A landscape artist might criticize one of two features of it somewhat but even then he must admit it is a most home-like scene. Let us increase the number of such home scenes in California and increase the number of such photos in our contest.

GOING TO THE FAIR.
Second Prize Photo by C. W. Vannote, Gridley.

The second prize winner is "some pumpkins," It is equipped with self-starter, six cylinders and all other equipment of a modern auto. The driver does not seem to keep his eye on the road but he will surely get there.

Let us have a bigger collection than ever for the first contest of 1915. We will want all photos in hand before the evening of December 30. Send in the photo of the Christmas tree for a Christmas scene will be most attractive to our eastern subscribers. The contest, however, is not limited to that class of photos but the best all-around California rural life scene will be the winner.

First prize, $2.00; second prize, $1.00 cash.

The Next Contest

The next prize contest is for a menu for a Christmas dinner, recipe for one dish and your plan for preparing the dinner so that as little work as possible is left for Christmas day itself. For the best menu $2.00 cash will be given. For the second best, $1.00. A six months' subscription to the Cultivator will be given to all whose menus are published.

Cultivator for Six Months

To all whose menus are published. When you send in your menu, send also name of one of your family who is now receiving the paper so his or her subscription may be extended rather than having a second copy go to your address for the six months.

Write Early

Address all letters to California Cultivator, Los Angeles, and mail them so they will reach this office by the morning of Thursday, December 10. The articles will appear in the issue of December 17 in time to give everybody opportunity to profit by the Christmas dinner suggestions.

AUTOMOBILES OF GREATEST BENEFIT TO FARMERS

Written for the California Cultivator By Sacramento Valley Contributor.

Farmers have been benefited more by the automobile than any other class of people. One of the great problems in agriculture is transportation. Time, to the value of millions of dollars, has been spent in going to and from market and in doing the thousand and one errands required in the operation of a farm and the conduct of a farm household. This time could have been, and now is, greatly reduced by the use of the automobile. In some districts in California as great a number of farmers use automobiles for "going to town jobs" as use horses. In the olden days when horses furnished the only motive power for wagon road transportation it required the best part of a day for the average farmer to go to town and back. By average is meant a considerable distance from town, for the greater per cent of the farmers in any community or county live far enough from town to make the trip by team "spoil" the day as far as work in the field is concerned.

The benefit of the automobile has extended over the whole field of agricultural endeavor. The big stockman who has cattle, sheep or hogs at various ranches finds it the most economical way to cover distance and conserve his time, even though he may be a great lover of horses and needs and uses many saddle horses on his ranch.

Many operators of large dairy ranches deliver cream to the shipping station or the creamery with an automobile truck or an automobile that may be converted into a semi-truck.

Breeders of purebred stock find an automobile the most satisfactory way to transfer crated hogs, sheep, chickens, calves and even, at times, mature cattle from the farm to the express station or boat.

Many of the new settlers on subdivision tracts throughout the state have automobiles. They are pioneering in a different way from their forefathers who moved from the eastern states to the prairies by way of ox teams and "schooners." There is no time in the history of a farm when a "machine" is of more real service than during the period of getting started, building houses and barns that always require running to town after the nails or hardware or something that has been overlooked or is short. Then in starting new machinery, few have ever been smart enough to be able to foresee all of the things that are apt to happen, and in remedying these oversights the automobile reduces days to hours.

On almost every farm at some time during the year there is a job of threshing or silo filling or fruit dipping and drying in which a comparatively large number of people are engaged. A break in any part of the machinery, often as little a thing as a bolt, will require a trip to town and lay up the whole job until the repair has been made. To be able to make the trip in an automobile reduces the delay to a fraction of what it would otherwise be. The direct saving of wages in such an emergency might easily be enough to pay the upkeep of a car for many months.

The automobile is a factor in American life that is now absolutely indispensable and would make automobile-making a big industry, even if no cars were ever run solely for pleasure.

GARDEN HARMONY

(Continued from page 554)

acres of any tropical fruits, not even avocados, but believe every home owner should plant a few, not only avocados but a considerable list of tropical and subtropical fruits—all you have room for. Put in some carissas and guavas and at least two plants of Australian nut, the Macadamia ternifolia. In the guava bed should be found two or more of the Paraguay guava, Feijoa Sellowiana, for it seems these plants are frequently self-sterile or nearly so and need an interchange of pollen. When such specific needs become known (sterility is also common in isolated avocados) the semi-tropic fruits will rapidly gain in popularity.

Fertilizing Lawns

Do not fertilize lawns too early. Why should you feed adjacent property, rivers, or the Pacific Ocean with your lawn fertilizer? This you will do if you fertilize before heavy rains and allow the latter to wash away all plant food. Reserve fertilizer until the hardest and most rains have fallen; you need only enough water to carry the juices down into the soil; an excess carries them too far, both as to distance and, in light soils, depth also. Conserve plant food rather than waste it in flood water.

Care of Garden Tools

It is at this season of the year that garden tools suffer most. Not only do the rains rust iron, but alternate wetting and drying soon destroys the value of wood. The constant expanding and contracting of wood-work, first wet and then dry, also quickly loosens all iron work in contact with it and tools both "shaky" and constantly coming to pieces are the natural result. Proper painting much lessens these evils, but a better precaution is to keep tools well housed.

Made-Up Soils

Having fully made up my mind that all the ingenuity of man cannot surpass nature in soil making, I am in a proper state of mind to advise the purchase of land where the soil is naturally fitted for the particular crop or crops you wish to grow. In my own garden I have soils that, so far as composition is concerned, appear ideal. They are loose and friable as corn meal, not lacking in any plant food, and for top crops," those grown above the surface, they are unsurpassed. But for bulbs and other underground crops a virgin soil of the same foundation, to which lime and sand was added, no fertilizer, "scooped them to a finish." Ideal made-up soils always seem to me to be "dead" when handled, a fact for which I cannot account and one I cannot overcome.

COWS plus HOGS

Every good cow at Fairmead brings in around $8.00 per month cash. 25 cows means $200.00 cash each month. Two creameries collect the butter-fat, paying the highest prices. One acre of alfalfa at Fairmead will support a cow the year round or 12 to 20 hogs. Hogs can be produced at Fairmead for 4c per pound. Present prices 8c to 10c cash. Why not farm for real money

At

FAIRMEAD

the worth-while fruit and alfalfa section of the San Joaquin Valley, where land prices are still low? Fill out and send today the following coupon:

Co-operative Land & Trust Co., Owners
595 Market St., San Francisco, Cal.

Kindly send me your free booklet—"How to obtain a farm at Fairmead on easy terms."

Name ....

Address ....

TREES TRUE TO NAME. The SILVA-BERGTHOLDT CO. NEWCASTLE CALIF. PLACER NURSERIES

Clingstone Peach Trees

TUSCAN! Ours are the improved Round Tuscans—firmer, more symmetrical and uniform, Finer Grained, less subject to Wind-Fall and Split-pit, and preferred (to the extent of $2 to $5 more a ton) by canners to the oblong Tuscans commonly propagated.

PHILLIPS! We cut our buds from a block of trees that have proven an exceptionally good strain of this variety. Peach trees are always a safe investment—the demand is large, the price firm, and the profit good. What more can you ask?

THE SILVA-BERGTHOLDT CO., "Fruit Tree Specialists," P. O. Box A Newcastle, Cal.

TREES TRUE TO NAME. The SILVA-BERGTHOLDT CO. NEWCASTLE CALIF. PLACER NURSERIES

Increased Production

The standard of poultry living and profit can be preserved and greatly increased by feeding

Coulson's Egg Food

When you take up a handful of Coulson's Egg Food you scarcely realize that you are looking at a dozen or two dozen eggs. But such is the case. The hen utilizes this food in the production of her eggs. It gives her the elements out of which she manufactures her product.

Coulson's Egg Food is not a stimulant—it is a food, and as such acts as an AID to egg production.

By insisting on Coulson's Egg Food—by refusing substitutes—you will be paving the way for a good yield from your flock, and at the same time giving your birds the VERY BEST at no additional cost.

Send for our free book, "Chickens." It is intensely interesting and instructive.

COULSON COMPANY
Petaluma, California

"Jackson MADE"

Self Payers

The pump you buy should raise the maximum quantity at the lowest cost per gallon, run constantly without repairs and with minimum attention.

"JACKSON MADE" PUMPS not only do this, but they are self-payers because their saving in power and repairs will pay their first cost in a very few months.

There is a "Jackson Made" Pump that will do the work you require at a lower cost than any other make.

Write us, tell us your pumping problems and our expert engineers will help you, free of cost.

Write For Catalog No. 48A

A Better Make Not Made

Byron - Jackson Iron Works, Inc.
357-361 Market St.,
SAN FRANCISCO, CAL.
212 N. Los Angeles St.,
LOS ANGELES, CAL.
WORKS—West Berkeley, Cal.

Baby Chicks: Standard Bred; The best to be had are shipped by us every week in the year. Also Petaluma's best utility stock. Price-list and pamphlet mailed free upon request.

Now booking orders for Fall and Spring delivery.

Thomas Hatchery, Petaluma, Cal., Route D.

PIPE Second Hand

SCREW CASING

Alexander Pipe Company

MAIN OFFICE—254 North Point St., San Francisco
BRANCH OFFICE - 1611 E. 6th St., Los Angeles

We Pay Postage

California Strained Honey, Almonds and Walnuts

Pure, Strained, Mountain Honey direct to your table by Parcels Post—8 lbs. net weight......$1.00

3½ lb. Sack Paper Shell Almonds $1.00

4½ lb. Sack Extra Fancy Walnuts $1.00

Postage Paid in Local, 1st, 2nd or 3rd Zones

Ask about Prepaid Holiday Packages for Eastern Friends

PRODUCER - TO - CONSUMER SUPPLY CO., 230½ South Spring St., Los Angeles

When writing advertisers, mention The Cultivator.

Poultry for Profit

COLD, ROUP AND CATARRH

An ounce of preventive may be worth a pound of cure. In fact it has proven so with us, and it is true with practically all poultrymen when it comes to the treatment of colds, roup and catarrh, says a bulletin from the Missouri Experimental Station. These diseases are responsible for the loss of thousands of birds each year. In fact, it is the most deadly of all diseases of adult poultry. Not only does it cause a tremendous number of deaths, but fowls which succeed in recovering from it should not be used for breeding purposes thus greatly increasing the loss due to its ravages. A great many people fail to distinguish between ordinary colds and genuine roup, due largely to the fact that the early symptoms are similar. Plain colds, however, are non-contagious and comparatively harmless, while roup is very contagious, usually either kills the bird or renders it unfit for further use. The first cases of colds should be taken as danger signals for roup, for when a chicken has a cold the roup germ can gain an easy foothold and usually does so unless special precautions are immediately taken. Your attention will usually first be attracted to birds that have taken cold by their sneezing or making a wheezing sound in breathing while they are at roost, and by a watery discharge from the eyes. Upon examination the feathers on the under side of the wing will often be foul and sticky, due to this mucous discharge from the eyes and nose. One or both eyes may be swollen or the lids stuck together by a sticky discharge. The appetite falls off, the feathers become roughed, and the patient has a generally run-down appearance.

MODEL POULTRY RANCH.

The most easily distinguishable characteristic of genuine roup is a peculiar and very offensive odor about the mouth and nose. As the case advances, a yellowish cheese-like mass usually forms in the nostrils, growing rapidly and sometimes entirely closing up the openings in from 24 to 48 hours. Cankerous growths often appear in the mouth, the eyes become feverish and inflamed, often swelling entirely shut, after which tumors sometimes develop, destroying the eye. The patient gradually weakens and death follows if treatment is not administered.

Upon the occurrence of an outbreak of roup the first thing to do is to take steps to check it as quickly as possible. All affected birds should be at once removed from the flock to a place that is clean, dry, well lighted, warm but well ventilated, and which can be thoroughly disinfected after the disease has run its course. Remove the litter from the houses and disinfect the houses and runs thoroughly with Zenoleum, Creolin or Cresol, mixed according to directions, or with a five per cent solution of carbolic acid. We have tried out and tested practically all the serums, "guaranteed roup cures," and remedies of various kinds recommended for roup. But we have come to the conclusion that the safest and best thing for any poultry raiser to do is to use all possible means to prevent the disease. This can best be done by breeding from healthy stock, providing comfortable houses which admit an abundance of ventilation and sunshine. The houses and yards must be dry. Ventilation, without drafts, is the best preventive. By all means have an opening near the floor to take out the bad air, if it is nothing but the exits for the fowls left open or covered with wire to permit of circulation of air. Most people imagine that the bad air in a poultry house is near the ceiling and they make openings there which take off all the pure warm air on winter nights, but the bad air, which breeds roup, settles nearest the floor. So in addition to your shutter, curtain, or open front, also have small openings near the floor in the front of the house to complete the system of ventilation and to take off the bad air. Be sure the floor and walls of the house are dry.

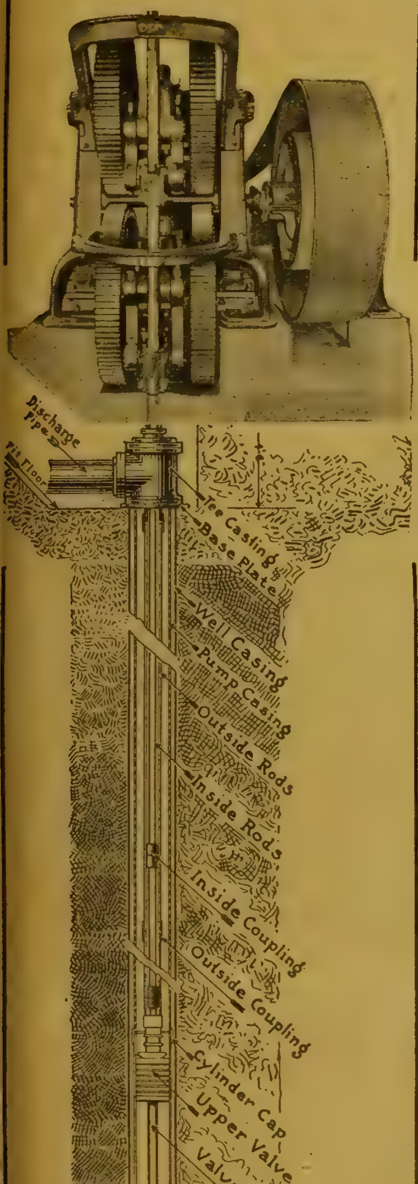
About every other day during the damp days of fall and winter, we would recommend the preventive treatment recommended by Tom

Pomona Deep Well PUMPS

—are efficient and reliable.

—operate cheaper and more economically than others.

—deliver water from great depths in steady, full volume without jerk, jar or vibration.



Write for Catalogue

Our pump catalogue No. 54C gives full details about the Pomona Pump and also contains valuable information on irrigation subjects. A copy will be sent free upon request.

POMONA Manufacturing Co.
Pomona, Calif.
LOS ANGELES OFFICE
920 INVESTMENT BUILDING
8TH AND BROADWAY

Barron of England: Magnesia 4.6 parts, magnesium sulphate 52.1 parts, sulphate of iron (copperas), 8.0 parts, sulphur 14.0 parts, ground ginger 8.6 parts, water 7.0 parts, oxide of iron (rouge) 0.7 parts. Tablespoon to each 12 birds every morning. Feed this in a moistened mash for a few days to the flock if they are attacked with an epidemic of roup, diphtheria, chicken pox, canker, liver trouble, or appear to be out of condition. As the birds show signs of improvement, discontinue the remedy until it is needed again. For bad cases of roup make a pill about the size of the end of your finger and put it down the bird's throat. Where the bird's eyes are swollen shut it is a good idea to force a little rich, moistened mash down the bird's throat. Also dip the bird's bill into water if it cannot see to drink. If the bird is thin and low in vitality, no treatment will do much good and the best thing to do is to kill and burn it. The doctoring of sick birds is tedious and, for the most part, discouraging business. Unless they are especially valuable, the axe is the best cure for all badly affected birds. After the nostrils have been thoroughly cleansed by pressing out all the mucous possible with the thumb and finger, it is a good idea to dip the head of the bird into a pan of warm water into which you have poured Zenoleum, Creolin, Cresol, or some other disinfectant. After the bird's head has dried, take an ordinary sewing machine oil can and inject a little of the following mixture into each nostril: three parts coal oil or kerosene, one part Zenoleum, Creolin or Cresol.

Mix these thoroughly and shake well each time before using. Give this treatment at least once a day. If the eye is affected, remove all mucous or cankerous substance and drop a mixture of equal parts water and Zenoleum, Creolin or Cresol, or some such disinfectant into each eye. If a tumor has formed about the face beneath the skin, open it with a sharp knife and allow it to bleed freely and press out all the substance which has collected and caused the tumor. Wash it with the disinfectant and water and then fill the opening with powdered alum.

Always bear in mind that an ounce of roup prevention is worth more than a pound of roup cure.

POULTRY SHOW FEATURES

An excellent feature of the Poultry Show that is to be held at the Auditorium, San Francisco, December 8 to 13, is the yard system of exhibiting fowls. A limit of ten birds is made to a yard. While these birds are not eligible for prizes, nevertheless they will be a great factor in affecting sales. When birds are grouped in this manner it makes it much easier for buyers to select the type of fowl they are after. A sales secretary will be on the floor to assist buyers and sellers, and no charge will be made for his work.

Another feature that should prove of great value to producer and consumer is the egg display. Every phase from packing to candling eggs will be shown. The eggs of the various breeds will be given a place, so that a comparison can be made. To show the producer the advantage of raising only first class eggs the various types that come into the market each day will be labeled with the average prices for a year. Alongside the extra choice eggs will be the alfalfa, the spotted, the bloody clot, the dirty, and all the other imperfections that go to take the profits out of the poultry business. The loss in price due to carelessness in shipping extra grade eggs will also be shown. Bad packing, not grading according to size and not washing the eggs will all be displayed so that even he who runs may read.

The show secretary is E. J. Talbot, Mutual Savings Bank, San Francisco.

HANDLING EGGS

The great spoilage of eggs in this country is due to bad handling and is quite unnecessary. Part of the remedy is to teach everybody, from the farmer to the consumer, how to tell the quality of an egg without breaking the shell. The country buyers, the middlemen and the housewife, judge of the quality of the inside of a cucumber or an eggplant, or any other vegetable, by the appearance of the outside and the firmness of its texture. It is not possible to tell the quality of an egg by looking at the shell, though it is safe to say that the eggs with shiny shells are apt to be aged. A fresh egg looks as though it had been dusted with a very fine powder; the "bloom," as the egg men say. But in order to know what is inside the shell the egg must be held in front of a strong light—such as an electric bulb furnishes, which comes through a hole about 1¼ inches in diameter. The room must be dark. When the egg is held close against the hole the bright light renders its contents visible, and the quality is indicated by the appearance of the yolk, the white and the air space at the blunt end. There are many egg "candles" on the market, but the housewife can easily make one for herself by cutting a hole in a small pasteboard box, which is slipped over an electric light bulb. If gas or an oil lamp is the source of light, a tin box or can should be used.

POULTRY SUGGESTIONS

Human sympathy to the bird's comfort amounts to dollars and cents.

Clean the nests occasionally and put in a fresh supply of nest material.

Uniform nest boxes add to the attractiveness of the house.

White diarrhoea is contagious among young chicks.

The purchase of a few baby chicks from some fine pen of birds will make a splendid start if you care to start in June.

If your breeding pens were properly bred and mated you need not be surprised to find some of the chickens developing into finer specimens than their parents.

Watch the chicks closely and mark the ones making the most satisfactory growth. Select the ones that are plump, full breasted and in good proportion. You will not care to keep those that grow leggy and have thin breasts.

Never, under any circumstances keep more birds than you can take care of well.

Green food is necessary for all ages of poultry but doubly so for the little chicks. Water and green food are cheap and very important.

Be sure the baby chicks have plenty of exercise. Keep them busy and hungry.

Keep the hopper full of dry mash all of the time. This gives the chickens an opportunity to balance the grain rations fed.

Remember full fed chicks are paying chicks. It pays big dividends to hurry their growth.

Always practice absolute cleanliness in feeding.

The Fresh Air Brooder Stove

It exhausts warm **Fresh Air** from its **Base** to the chicks. If you use our stove you can't get away from proper **ventilation**. **Our 1915 Brooder Stove** is by far the best model we have ever produced. Let us send you our **New Catalogue**. It is full of splendid information **and** value to you with any **system**.

J. E. Kresky
Petaluma, California

French's Poultry Mustard

Sold in Sealed Packages Only

French's Poultry Mustard is a scientifically manufactured article containing the flours of different mustard seeds so blended to produce the greatest strength in the volatile principle that is desired, and is required to produce the fortunate results arrived at by the users.

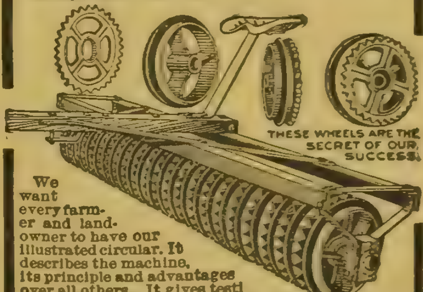
BOOKLET FREE

For better service please addres Dept. C

Germain SEED & PLANT CO. Established 1871
326-328-330 SO. MAIN ST.
LOS ANGELES. CALIFORNIA

3 MACHINES IN 1

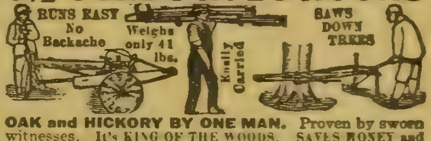
A perfect seed bed is as important as to sow or plant. The Western Pulverizer, Packer and Mulcher makes a perfect seed bed and leaves a loose mulch on top to retain the moisture in one operation. It will double profits on crops. Made in 8 sizes, 1 and 3 sections. **Sold direct to you on one year's trial. Prices, $22.00 and up.**


THESE WHEELS ARE THE SECRET OF OUR SUCCESS.

We want every farmer and landowner to have our illustrated circular. It describes the machine, its principle and advantages over all others. It gives testimonials from many farmers proving what it will do on wheat, alfalfa and other crops. It contains valuable information on how to prepare the soil for better results. Send for this circular today, whether you want to buy or not.

WESTERN LAND ROLLER CO.
Box 441 Hastings, Nebr.

9½ CORDS IN 10 HOURS



OAK and HICKORY BY ONE MAN. Proven by sworn witnesses. It's KING OF THE WOODS. SAVES MONEY and BACKACHE. **SPRING PRESSURE and GUIDE**, adjustable to boy or man, now used on end of saw, a **BIG 1915 IMPROVEMENT, KEEPS SAW FROM FLOPPING** and makes thin, straight cut. Send for free catalog X5 showing LATEST IMPROVEMENTS. First order gets agency.
Folding Sawing Mach. Co., 161 W. Harrison St., Chicago, Ill.

Chicks Pullets

Right now we can supply every week many kinds of chicks. Can supply laying pullets of most every variety, also cocks, laying hens, etc. Write us.

PIONEER HATCHERY
112 E. 8th St. Los Angeles

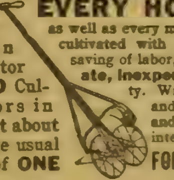
Crown Bone Cutter

BEST MADE Lowest in Price

Feed your hens cut green bone and get more eggs. With a Crown Bone Cutter you can cut up all scrap bones easily and quickly, and without any trouble, and have cut bone fresh every day for your poultry. Send at once for free catalogue.
WILSON BROS. CO., Box 247, Easton, Pa.

Poultry Book—Containes articles on building poultry houses and plans; pictures of our farms and poultry. This book is worth dollars, sent for (10) cents cash or stamps. We are the largest breeders of poultry in the world. Stock and eggs for sale.
UNITED POULTRY FARMS, BOX 5 HOPE, IND.

Our Duplex Garden Cultivator is **TWO** Cultivators in **ONE** at about half the usual price of **ONE**



EVERY HOME GARDEN as well as every market garden may now be cultivated with this cultivator at a great saving of labor, for it is **easy to operate, inexpensive**, and of great capacity. Write for descriptive circular and special introductory offer and write to-day for it will interest you.

FORD & CO., 11 Schofield Avenue, FREEPORT, ILL.

THE ALAMEDA COUNTY SHOW

The recent Oakland show makes the claim of a record breaker in many ways. The individual exhibits are said to have exceeded 6000.

In connection with the poultry show the California Pigeon Club and the Pacific Coast Rabbit Association held their shows and the combination made a strong drawing card.

Judge Russell of Ottumwa made the claim that this was the most successful poultry exhibition yet pulled off west of the Rockies.

The awards were:

AMERICAN CLASS

Partridge Plymouth Rocks—Ck.—1, Mrs. E. O. Thomas, 2, Vaughan, 3, A. W. Hoffman; hens—1, 3, A. W. Hoffman, 2, R. G. Arlett; ckl.—1, A. W. Hoffman, 2, A. E. Sinclair; pullet —1, M. Vaughan; pen—1, A. E. Sinclair, 2, M. Vaughan.

Barred Plymouth Rocks—Ck.—1, A. D. Robinson, 2, W. H. Husband, 3, J. A. Schuler; hen—1, 2, A. D. Robinson,, 3, W. H. Husband, 4, Ed. Ellis; ckl.—1, A. D. Robinson, 2, Mr. and Mrs. Chas. A. Thomas, 3, Henry B. Knox, 4, 5, W H. Husband; pullet—1, 2, 3, A. D. Robinson, 4, Mrs. C. W. Presher, 5, Mr. and Mrs. Chas. A. Thomas; pen—1, A. D. Robinson, 2, Ed. Ellis; ckl.-bred hens—1, A. D. Robinson, 2, H. B. Knox, 3, W. H. Husband; ckl.-bred pullet—1, 2, A. D. Robinson, 3, 5, Mrs. C. W. Presher, 4, W. H. Husband; ckl.-mated pens—1, A. D. Robinson, 2, W. H. Husband, 3, Mrs. J. R. Dooling; pullet-bred ck—1, 2, 4, A. D. Robinson, 3, Mr. and Mrs. Chas. A. Thomas, 5, Mrs. C. W. Presher; pullet mated pen—1, A. D. Robinson, 2, W. H. Husband.

White Plymouth Rocks—Ck.—1, 2, 4, A. A. Bamford, 3, Mrs. M. J. King, 5, Mr. and Mrs. A. R. Dees; hen—1, 3, 4, A. A. Bamford, 2, C. O. Preston, 5, Diablo Poultry Farm; ckl.—1, 4, A. A. Bamford, 2, 5, Diablo Poultry Farm, 3, Orville B. Hunt; pullet—1, 3, 4, A. A. Bamford, 2, Mrs. F. M. Ridley, 5, Diablo Poultry Farm; pen—1, A. A. Bamford, 2, Mrs. M. J. King, 3, Mrs. F. M. Ridley, 4, Diablo Poultry Farm, 5, C. O. Preston.

Rhode Island Reds—Ck.—1, C.F. Holman; hen—1, 2, C. F. Holman; ckl.—1, Wm.Larm, 2, E. A. Willing; pullet—1, C. F. Holman, 2, E. A. Willing; pen—1, Mrs. W. H. Johnson.

S. C. Rhode Island Reds—Ck.—1, Fowler & Masterson, 2, 3, A. E. Sinclair, 4, Mrs. F. Weaver, 5, Peter Block; hen—1, Wm. O'Connell, 2, 3, Fowler & Masterson, 4, Mrs. D. Finnegan, 5, D. Murphey; ckl.—1, 4, Wm. Larm, 2, 3, Fowler & Masterson, 5, R. R. James; pullet—1, R. A. James, 2, A. E. Sinclair, 3, 5, Fowler & Masterson, 4, Mrs. D. Finnegan; pen—1, Fowler & Masterson, 2, Wm. Larm.

White Wyandottes—Ck.—1, Mr. and Mrs. R. W. Stawetski, 2, H. N. Bright, 3, Thos. Nuttall; hen—1, 3, Mr. and Mrs. R. W. Stawetski, 2, 4, H. M. Bright; ckl.—1, Mr. and Mrs. R. W. Stawetski, 2, H, N, Bright, 3, Chas. P. MacLafferty; pullet—1, 3, H. N. Bright, 2, Mr. and Mrs. R. W. Stawetski; pen—1, Chas. P. MacLafferty, 2, Mr. and Mrs. R. W. Stawetski.

Columbian ..Wyandottes — Ck. — 1, hen, 1, 2, 3, 4, Mrs. Geo. E. Morgan.

Silver Wyandottes—Ck.,1; hen, 1; pullet, 1; E. J. Carroll.

Buttercups—Ck.— 1, E. R. Drew, 2, M. S. Woodhams; hen—1, 2, M. S. Woodhams, 3, G. L. Wakeman; ckl.—1, 3, G. L. Wakeman, 2, E. R. Drew, 4, M. S. Woodhams, 5, Frank Bergert; pullet——1, 4, E. R. Drew, 2, M. S. Woodhams, 3, 5, Frank Bergert; pen —1, G. L. Wakeman, 2, M. S. Woodhams.

MEDITERRANEAN CLASS

S. C. Brown Leghorns—Hen—1, ckl.—1, Mrs. Wm. Bond; pullet—1, Bessie Schafer; pen—1, Mrs. C. W. Presher, 2, D. A. Cohen.

S. C. Buff Leghorns—Ckl.—1,2, A. R. Schroeder, 3, H. Garms; pullet—1, 2, A. R. Schroeder.

S. C. White Leghorns—Ck.—1. 2. 3. Mrs. E. B. Martin, 4, Warren Huffman, 5, A. R. Schroeder; hen—1, 2, 3, Mrs. E. B. Martin, 4, 5, Chas. F. Holman; ckl.—1, 2, 3, 5, Mrs. E. B. Martin, 4, C. F. Holman; pullet—1, 2, 3, Mrs. E. B. Martin, 4, 5, Warren Huffman; pen —1, Mrs. E. B. Martin, 2, Chas. F. Holman, 3, Florence E. Mohere.

S. C. Black Minorcas—Hen—1, 2, 3, J. V. McConnell, 4, A. W. Cowell, 5, J. F. Harwood; ckl.—1, 2, 3; pullet—1, 2, 3, 4, J. V. McConnell; pen—1, G. Stinebaugh, 2, J. V. McConnell, 3, J. F. Harwood.

S. C. White Minorcas—Ck.—1, J. F. Harwood, 2, E. H. Smith; hen—1, 3, T. P. Evans, 2, 4, E. H. Smith; ckl.—1, T. P. Evans, 2, 3, E. H. Smith, 4, W. T. House, 5, J. F. Harwood; pullet —1, 2, 3, E. H. Smith; pen—1, J. F. Harwood.

R. C. White Minorcas—Ck., 1; hen, 1; ckl., 1; pullet, 1; pen, 1; A. C. Anderson.

Blue Andalusians—Ck.—1, A. W. Hoffman, 2, Helen Rosenberg; hen—1, 2, Helen Rosenberg; pullet—1, 2, H. Y. Thomas, 3, A. W. Hoffman; pen —1, Mrs. R. W. Griggs.

S. C. Ancona—Ck.—1, 2, L. W. Potts, 3, L. Miles, 4, C. F. Holman; hen—1, 4, L. W. Potts, 2, C. F. Holman, 3, T. E. Silva, 5, L. Miles; ckl.—1, A. O. Johnson, 2, 4, 5, L. W. Potts, 3, C. F. Holman; pullet—1, 4, L. W. Potts, 2, T. E. Silva, 3, C. F. Holman, 5, L. Miles; pen—1, 3, L. W. Potts, 2, C. F. Holman.

R. C. Anconas—Ck.—1, ckl.—1, T. E. Silva.

ASIATIC CLASS

Black Langsham—Ck.—1, 3, 5, Geo. A. Janssen, 2, Jas. R. Crabtree, 4, M. W. Nicholson; hen—1, 5, M. W. Nicholson, 2, 3, Geo. A. Janssen, 4, Jas R. Crabtree; ckl.—1, Geo. Lohr, 2, 4, Geo. A. Janssen, 3, C. E. Ross, 5, Peter Block; pullet—1, 4, C. E. Ross, 2, 3, Geo. A. Janssen, 5, Geo. Lohr.

Partridge Cochins—Ck.—1, henl, D. A. Cohen; ckl.—1, T. P. Evans, 2, 4, W. T. House, 3, D. A. Cohen; pullet —1, 2, 3; pen—1, W. T. House.

Light Brahmas—Ck.—1, hen—1, 2, 3, D. A. Cohen.

ENGLISH CLASS

Buff Orpingtons—Ck.—1, Mrs. C. M. Smythe, 2, C. F. Holman, 3, W. J. Toaspern, 4, C. C. Parish; hen—1, ckl.—1, 2, 3, pullet—1, 2, Mrs. C. M. Smythe, pullet 3, C. C. Parish; pen—1, C. F. Holman.

Black Orpingtons—Ck.—1, C. F. Holman, 2, W. W. Dulin; hen—1, 3, 4, C. F. Holman, 2, W. W. Dulin; ckl.—1, 3, 4, Frank Olmo, 2, C. F. Holman, 5, B. Spicer; pullet—1. 2. 3. 4. 5. Frank Olmo; pen—1, C. F. Holman.

White Orpingtons—Ck.—1, Peter Block, 2, Newark Farms, 3, C. F. Holman; hen—1, 4, B. Hagedorn, 2, Jas. Bailey, 3, 5, C. F. Holman; ckl.—1, 3, W. T. Frost, 2, Jas. Bailey, 4, Albert W. Menefee, 5, McCamman & Tebbs; pullet—1, 2, W. T. Frost, 3, A. W. Menefee, 4, C. F. Holman, 5, M. S. Woodhams; pen—1, B. Hagedorn, 2, C. F. Holman, 3, McCamman & Tebbs.

Red Orpingtons—Ck.—2, McCamman & Tebbs.

Light Sussex—Ck.—1, W. H. Asselstine.

DUTCH CLASS

Silver Spangled Hamburgs—Pullet —1, 2, Newark Farms; pen—1, G. L. Wakeman.

POLISH CLASS

W. C. Polish—Ck. 1, hen 1, 2, ckl. 1, pullet 1, 2, pen 1, C. F. Holman.

FRENCH CLASS

Houdans—Ck.—1, 3, 4, 5, Emma F. Reid; ck.—2, L. Guddal; hen—1, 2, 3, 4, Emma F. Reid; hen—5, Wayne Wright; ckl.—1, 2, 3, 4, 5, Emma F. Reid; pullet—1, 2, 3, 4, 5, Emma F. Reid; pen—1, 2, 4, Emma F. Reid; pen—3, Wayne Wright.

Silver Campine—Ck.—1, J. L. Ewers, 2, McCamman & Tebbs, 3, C. D. Brown; hen—1, J. S. Johnston, 2, 3, McCamman & Tebbs, 4, Dr. W. H. Watkins, 5, C. D. Brown; ckl.—1, 3, J. L. Ewers, 2, 4, H. W. Truesdell, 5, McCamman & Tebbs; pullet—1, J. L. Ewers, A. E. Sinclair, 2, A. E. Sinclair, 3, J. L. Ewers, 5, Dr. W. H. Watkins.

Golden Campine—Hen—1, 2, 3, Jackson & Ratto; ckl.—1, 2, 5, H. W. Truesdell, 3, 4, Jackson & Ratto; pullet—1, W. I. DeLong, 2, 3 4, 5, Jackson & Ratto.

ORIENTAL CLASS

Dark Cornish—Ck.—1, C. F. Holman, 2, C. L. Griffith, 3, D. A. Cohen, 4, B. P. Lausten; hen—1, 2, C. F. Holman, 3, 4, B. P. Lausten, 5, C. L. Griffith; ckl.—1, C. F. Holman, 2, Richard Keatings, 3, 4, B. P. Lausten; pullet—1, C. F. Holman, 2, 3, B. P. Lausten; pen—1, 2, C. L. Griffith, 3, B. P. Lausten.

GUINEA FOWLS

Ck.—1, 2, 3, 4; hen—1, 2, 3, 4; ckl.—1, 2, 3, 4; pullet—1, 2, 3, 4, D. A. Cohen.

DUCKS

Muscovy—Old drake—1, 2, Emma F. Reid, 3, 4, D. A. Cohen, 5, W. L. Ceimar; old duck—1, 5, D. A. Cohen, 2, 3, 4, Emma F. Reid; young drake—1, 2, 3, 4, 5, Emma F. Reid; young duck—1, 2, 3, 4, 5, Emma F. Reid.

White Muscovy—Old drake—1, old duck, 1, 2, young drake—2, 3, young duck—1, 2, D. A. Cohen.

White Breasted Black Muscovy—Old drake—1, 2, old duck—1, 2, D. A. Cohen.

Penciled Indian—Pen—1, W. T. Frost.

GEESE

Toulouse—Old gander—1, 2, 3; old goose—1, M. F. Giddings, 2, D. A. Cohen; young gander—1, James Welton, 2, 3, D. A. Cohen; young goose—1, James Welton, 2, 3, 4, 5, D. A. Cohen.

TURKEYS

White Holland—Hen—1, 2, 3, 4; ckl. —1; pullet—1, D. A. Cohen.

Buff—Ck.—1, 2; hen—1, 2, 3; pullet —1, 2, D. A. Cohen.

Bronze—Ck.—1, Mrs. W. Bond, 2, N. E. Mulick; hen—1, Mrs. W. Bond, 2, 4, Albert M. Hart, 3, D. A. Cohen, 5, N. E. Mulick; yearling cocks—1, 3, Albert M. Hart, 2, D. A. Cohen; ckl.—1, N. E. Mulick, 2, D. A. Cohen, 3, 4, 5, A. M. Hart; pullet—1, 4, D. A. Cohen, 2, N. E. Mulick, 3, 5, A. M. Hart.

Partridge—Hen—1, 2, 3,; ckl.—1, 2, D. A. Cohen.

BANTAM CLASS

Black Cochin—Ck.—1, 2; hen—1, 2, 3, 4, 5, Eugene Hinds.

White Cochin — Ck. — 1, Eugene Hinds, 2, B. Spicer, 3, D. A. Cohen; hen—1, 2, 4, Eugene Hinds, 3, 5, B. Spicer; ckl.—1; pullet—1, 2, 5, Eugene Hinds, 3, 4, B. Spicer.

Buff Cochin—Ck.—1, B. Spicer, 2, 3, Eugene Hinds, 4, 5, H. R. Noack; hen —1, 2, Eugene Hinds, 3, Mr. and Mrs. Fred Willin, 4, B. Spicer, 5, H. R. Noack; ckl.—1, 2, 3, Eugene Hinds, 4, Mr. and Mrs. Fred Willin, 5, H. R. Noack; pullet—1, 2, Eugene Hinds, 3, Mr. and Mrs. Fred Willin, 4, 5, H. R. Noack; pen—1, H. R. Noack.

B. B. Red Game—Ck.—1, 2; hen—1, 2; ckl.—1, 2; pullet—1, 2; pen—1, Dr. D. D. Davenport.

Silver Duckwing Game—Ck.—1; hen —1, 2; ckl.—1, 2; pullet—1, 2, W. J. Chedzey.

Golden Duckwing Game—Ck.—1, Arthur Dixon.

GAME CLASS

Lemon Pyle—Ck.—2, Jerome J. Koenig.

Red Pyle—Hen—2, D. A. Cohen.

Black Breasted Red—Ck.—1, 2; hen —1; ckl.—1, 2; pullet—1, 2, D. A. Cohen.

Brown Red—Ck.—1; hen—1, 2, 3; ckl.—1, 2; pullet—1, 2, 3, 4, D. A. Cohen; hen—4, Wayne Wright.

Japanese—Ck.—1; hen—1, 2, 3; pullet—1, R. S. Northey; hen—4, 5, A. W. Hoffman.

Macoy Jungle—Ck.—1, J. Heide.

Pit—Ck.—1, 4, J. Heide, 2, D. A. Cohen, 3, A. W. Hoffman, 5, C. J. Tymeson; hen—1, C. J. Tymeson, 2, A. W. Hoffman, 3, 5, D. A. Cohen, 4, Paul Baker; ckl.—1, 2, 3, J. Heide, 4, 5, C. J. Tymeson; pullet—1, 2, 5, J. Heide, 3, 4, Paul Baker; pen—1, 3, D. A. Cohen, 2, C. J. Tymeson.

SPECIALS

Best Bird—S. C. White Leghorn pullet, Mrs. E. B. Martin; best pen—White Plymouth Rock, A. A. Bamford; best Buff Orpington—Pullet, Mrs. C. M. Smythe.

Best Male—S. C. Black Minorca, G Stinebaugh. Best female—S. C. White Leghorn pullet, Mrs. E. B. Martin.

AMERICAN POULTRY ASSOCIATION MEDALS

Best Cockerel — White Plymouth Rock, A. A. Bamford. Best Bantam Cockerel, Buff Cochin, H. R. Noack.

AMERICAN - ASIATIC - ENGLISH CLASSES

Best Male—Black Orpington Cockerel, Frank Olmo. Best female—Buff Orpington pullet, Mrs. C. M. Smythe.

WATER FOWL AND TURKEYS

Best Gander—Toulouse, C. J. Giddings. Best Bronze Turkey hen, Mrs W. Bond.

ORNAMENTAL BANTAMS

Best Male—Black Cochin cock; second, White Cochin cock; best female, White Cochin pullet; second best female, White Cochin hen, Eugene Hinds.

GAME BANTAMS

Best Male—B. B. Red Game cockerel, Dr. D. D. Davenport; second, Silver Duckwing cock, W. J. Chedzey best female, B. B. Red pullet; second B. B. Red pullet, Dr. D. D. Davenport

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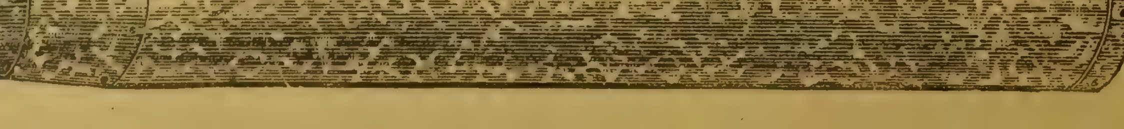

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For Sale—50,000 Sour Orange seed bed stock, fine quality, or will let to responsible party on percentage basis; also 2000 A1 late Valencias, two years old next spring, or might exchange for Washington navels. H. H. Eshelman, Soldiers' Home, Cal.

For Sale—Mission Olives; will be two years old next March. To be absolutely sure of getting Missions I only propagate from my own trees, raised by me thirty years ago. Also cuttings from same trees for sale. W. A. Hayne, Marysville, Cal., Box 461.

For Sale—At Corning, 4,000 Mission Olive trees from three to seven feet in height. Cuttings selected from the best producing orchards at Corning. Trees mostly two years' old in March. Address Midland Counties Land & Irrigation Co., First National Bank Bldg., San Francisco.

The Walnut Nursery has a fine lot of grafted walnut trees again this season, Chase, Eureka, Mayette and Placentia Perfection. Order now and get the best. W. A. Litten, Prop., R. F. D. No. 2, Whittier, Cal. Home phone 7863.

Walnut Trees—Eureka and El Monte varieties a specialty, also Franquette and Placentia. Write for prices and description of stock. Personal inspection invited. Eureka Walnut Nursery, Montebello, Cal.

Potrero Heights Walnut Nursery—Placentia Perfection Walnuts a specialty. Native Black Walnut roots. Get my prices and order early. Address A. H. Jessup, San Gabriel, Cal., Route 2.

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Mission Olive and Eureka Lemon trees for immediate planting. Write for special prices. A. C. Wisegarver, San Fernando, Cal.

Walnut Trees, Wilson Wonder, Franquette, budded on Northern Black Walnut root. Prices right; order early. Ekstein Nurseries, Modesto, Cal.

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Pullets—Thoroughbred stock—Golden Buff Leghorns—Sheppard's strain Ancona—White Leghorn—White Minorca hens—baby chicks and eggs. Prices reasonable. Sand Ridge Hatchery, Kerman, Cal.

Baby Chicks—After December 15, R. I. Reds and White Leghorns from finest laying strains in California, a few cocks and cockerels of both breeds for sale. Rainescourt Poultry Ranch, Zelzah, Cal.

Barred Rock Cockerels—(Hawkins Royal Blue Strain) ready for mating, also Barred Rock, R. I. Red, Buff and White Orpington day-old chicks every week. Enoch Crews, Santa Cruz, Cal.

For Sale—16 to 17 dozen Rhode Island Reds and Barred Plymouth Rock Pullets, 5 and 6 months old; also few cockerels same age. Inquire Geo. A. Sill, Watsonville, Cal.

Booking Orders for Hatching Eggs from S. C. White Leghorns, utility birds; selected stock. $6.00 per 100; $50.00 per 1000. **No baby chicks. Pine Tree Poultry Farm,** Los Gatos, Cal.

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Baby Chicks (White Leghorns)—Shipped on approval. Examine at your home before remitting. No weak ones charged for. Schellville Hatchery, Sonoma, Cal.

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For Sale—New Zealand Rabbits. "The best meat producers." A grand bunch of fine, red, half-grown youngsters, 1 buck and 3 does for $5.00. Also mature stock. Your chance to secure a start of this splendid strain at small cost. Shipped anywhere. Standard Rabbitry, Santa Ana, Cal.

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For Sale—New Zealand Reds, fine breeding stock. Also Barred Rock eggs for hatching. Mrs. C. A. Richey, R. D. 8, Box 557, Los Angeles.

BEES

For Sale—300 Colonies of bees in 10 framed Langstroth hives in first class condition. All queens raised from Moore's best queen. M. H. Mendleson, Ventura, Cal.

Beekeeping Pays Big—Price list, bees, instruction books, etc., free. Spencer Apiaries Co., Box 14, Nordhoff, Cal.

LIVE STOCK

Ohio Improved Chester White (O. I. C.) Entire herd immunized against hog cholera.
Nothing but immunized stock sent out. Extra fine lot of fall pigs, both sexes, ready for shipment during December and January. Three herd boars used. All stock crated and registered. Make reservations now. C. B. Cunningham, Mills, Sacramento Co., Cal.

Grape Wild Farm Thoroughbreds—Guernsey Bulls of A. R. Breeding. BERKSHIRE HOGS. **Finest herd in the state All ages for sale. A. B. Humphrey, proprietor. Mayhews, Sacramento Co., California.**

Duroc-Jersey Boars—Four months old; registered. Fine individuals. Silver-Spangled Hamburg roosters. Prices reasonable. Tribble Nurseries, Elk Grove, Cal.

Thoroughbred Berkshire Boars of all ages from developed and large-boned hogs. Riccomi Bros., Mountain View, Cal.

Glenview Poland China—Stock for sale Chas. R. Hanna, R. F. D. No. 3, Riverside, Cal.

For Sale—Young registered Berkshire boars and sows, fine strong stock. Stanislaus Ranch Co., Crows Landing, Cal.

M. H. Locke Co., Lockeford, Cal.—Choice young Jersey bulls for sale.

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FOR SALE—SECOND-HAND WINDMILLS, TANKS, PUMPS, ENGINES, RANCH MACHINERY

Some new at real sacrifice, till January 1st, to clean up. New Galvanized tanks, save 30 per cent and freight, 1000-gallons, $19.50; 2000, $29.50. Engines, 25 per cent of first price. 18 H. P. engine pump, 50,000 gallons, tank cost $1800, all for $400; sell part; 3 H. P., $50; new 4, $58; 5, $95; 12 horse, $125. Holt steam tractor combined harvester, 24 disc cultivator on cars, $790. Cost $6000. Trade for auto, real estate, what? Our material absolutely best serviceable material can be produced for. Pioneers in our line. Call, write Demmitt Company, office 120 N. Main street, 15191, Broadway 1984.

Distillate and Oil Engines—Pumping machinery of every description, spraying outfits, pulleys, belting, etc. We also have some used engines and pumps which have been put in first-class condition, which we can sell at a great reduction. The money saving Lawter Tractor is specially designed for heavy field subsoil plowing at one-half the expense with horses. Write for literature. Wm. Gregory, 602 N. Main street, Los Angeles, Cal.

Gas engines, centrifugal and deep well pumps, motors, and everything pertaining to irrigation, for sale and exchange. If you want a complete plant or any part write us; we are experts in irrigation; advice and estimates cheerfully given. Will buy, sell or exchange. Reliable and responsible, everything guaranteed as represented. Machinery & Motor Exchange, Inc., 733-735 San Fernando St., Los Angeles. Main 6383, F-2433.

For Sale—Used and new gas engine, 2 H.P. up, rebuilt and fitted with modern equipment. 22 years' experience enables us to repair and rebuild gas engines correctly. Get our prices. Lloyd, 806 N. Main, Los Angeles.

SEEDS AND PLANTS

Seed Barley—We grow it on our own ranch, reclean it in our own mill, and sell it in our own store. Write for price and sample, stating quantity wanted. West Coast Seed House, 116-118 E. 7th St., Los Angeles, Cal.

Strawberry Plants—Gold Dollar, Early Ozark, Gold Mine, St. Louis Missionary. Fine plants, pure stock, prolific bearers. Large red berries, $2.50 per 1000. Himalaya Blackberry plants $3.00 per 100. W. E. Hixon, Arroyo Grande, Cal.

Strawberry Plants — Gold Dollar, Clark Seedlings, Magoons, Wm. Belt, Marshalls, Goodells, Early Ozark, and new Oregons, $2.50 per thousand. Thoroughbred plants. Mr. John Christiansen, R. F. D. 2, Canby, Oregon.

Berry Plants, Rhubarb, Cacti—It will be worth your while to send me a postal right now if you are interested. Louis F. Scribner, R. 2, Pasadena, Cal.

Strawberry Plants — Magoon, Marshall, New Oregon, Hood River or Clark's Seedling, Klondykes, etc., $2.50 per 1000. Fine plants, well packed. J. W. Vinacke, Canby, Oregon.

Present and Future Delivery Contracts Solicited—Luther Burbank & Mediterranean Spineless Cactus Plantations, San Dimas, Cal. R. F. D. 35 A.

Calla Bulblets—To plant half acre for $15.00. Write for sample and particulars. J. Beaman, 633 Soquel Road, Santa Cruz, Cal. Route 2.

For Sale—Alfalfa seed free from bad seeds, fine quality, at 14c lb. Inquire of H. S. Garrison, Murietta, Cal.

Thornless Cactus Slabs for sale at 5 to 15 cents each. Chas. R. Hanna, R. D No 3 Riverside Cal

For Sale—Several hundred pounds imported Velmorin's White Sugar Beet Seed. Address Box 96, Sierra Madre, Cal.

For Sale—I have 1100 Avocado Seeds still unsold. Price, $5.00 per hundred. H. A. Phelps, Sherman, Cal.

For Sale—Avocado Seed, also fine budded "Taft" Avocado trees. C. P. Taft, Orange, Cal.

DUCKS

Ducks—High class Mammoth Imperial Pekin Ducks, and Indian Runners for breeders. Also eggs. The best stock in California. Stone Canyon Poultry Farm P. O. Box 348, Sawtelle, Cal. Sunset Phone 565-M Santa Monica Exchange

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MISCELLANEOUS

Free for Six Months—My special offer to introduce my magazine "INVESTING FOR PROFIT." **It is worth $10 a copy to anyone who has been getting poorer while the rich, richer. It demonstrates the** REAL **earning power of money, and shows how anyone, no matter how poor,** CAN **acquire riches.** INVESTING FOR PROFIT **is the only progressive financial journal published. It shows how $100 grows to $2200. Write** NOW **and I'll send it six months free. H. L. Barber, 480, 2** W. Jackson Blvd., Chicago.

To Let—For Lease, 10 acres of high ground between Glendale and Burbank; small cottage, 2 large glass hot houses and pumping plant. This is a hot house proposition with the 10 acres thrown in. Albert M. Stephens Co., 914 Merchants' National Bank Bldg., Los Angeles, Cal.

Dynamite—For practical uses of dynamite; as in tree planting, subsoiling, removing stumps and boulders, drainage, etc. Also for blasting supplies. See B. K. Deal, 1520 W. 45th St., Los Angeles, Cal.

For Sale—One Studebaker, rubber-tired surry—cut-under body—canopy top and shafts. Also steel-tired Stanhope buggy—3-bow top and shafts. $75.00 for the two—in good condition. Address P. O. Box 823, Pasadena, Cal.

Musical Instruments—All kinds tuned, repaired, bought, sold, exchanged; expert violin repairing reasonable; bow repairing 75c; piano tuning, $2.00; bargains in used instruments. Lindberg Music Co., 219 W. 2nd, Los Angeles.

Ranchers—We can handle your honey, beans, nuts, dried fruits, etc., at good prices. Send full information. Producers to Consumers Supply Co., Room 306, 230½ S. Spring St., Los Angeles, Cal.

"Smith's Pay the Freight"—To reduce the high cost of living, send for our Wholesale to Consumer Catalogue. Smith's Cash Store, 112 Clay St., San Francisco.

TURKEYS

For Sale—Mammoth White Holland Turkeys. Mature hens and toms. ALSO young stock from five distinct pens, headed by toms from yards of leading breeders of this breed in the state. EGGS IN SEASON. Orders given prompt attention. Prices on application. Address H. McKusick, Box 733, Calexico, Imperial Co., Cal.

Sharp's White Holland Turkeys made a clean sweep at California State Fair, including sweepstake. And also at Fresno County Fair. ALSO snow white Leghorns, stock for sale. Henry Sharp, R. 2, Box 70, Selma, Fresno Co., Cal.

Mammoth Bronze Turkeys—Strong, vigorous, well marked toms and hens from the best blood of prize winning and utility stock. Prices reasonable. Geo. A. Smith, Corcoran, Cal.

Giant Bronze Turkey Toms from prize winning stock; weigh over 20 lbs. at 8 months. Write for prices. Mrs. Nellie Hart, Holtville, Cal.

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I want unimproved citrus land or other good realty unincumbered.

Will give one or two-year citrus nursery trees, unexcelled in

- (a) Character. Fruit buds only of unusual trees. None more highly bred for results.
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Nurseries at Azusa, Cal.

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Man Wanted—To a man furnishing a bunch of cows to establish a dairy on my 70-acre alfalfa ranch in the Pomona Valley, I will sell a part or half interest at $350 per acre and let him take charge of the place on cash or share basis. Herbert F. Clark, 31 N. Granada, Alhambra, Cal.

Wanted—We have an unusual proposition to make any young man or woman who is planning better things for the future. You must have business education. You can earn board, room and tuition. Telegraphy, stenography, bookkeeping, English branches. Write now. Mackay Business College, 910 Main street, Los Angeles, Cal.

Farms Wanted—We have direct buyers. Don't pay commissions. Write describing property, naming lowest price. We help buyers locate desirable property Free. American Investment Association, 12 Palace Bldg., Minneapolis, Minn.

Wanted—If you have property of any description for sale or exchange, and want quick results, drop me a card. I will explain plan. F. P. Grogan, Charter Oak, Cal.

Wanted—To hear from owner of good farm for sale. Send cash price and description. D. F. Bush, Minneapolis, Minn.

HORTICULTURAL PRINTING

Catalogues for the seed and nursery trade. The live stock and poultry industries are a specialty with us. Two thousand illustrations to select from. Write for prices and samples. The Kruckeberg Press, 237 Franklin St., Los Angeles.

A CORRECTION

In the Cultivator of November 19th, appeared an announcement for the Los Angeles Soap Company of their new Mermaid Spray Powder for spraying citrus and deciduous fruit trees. Through an error on the part of the type compositor, the analysis was made to read—Curd Soap 50%, Bi-carbonate Soda, 5.0%, Carbonate Soda 37.5%, Balance Moisture.

This should have read—Curd Soap 50%, Bi-carbonate Soda 0.5%, Carbonate Soda 37.5%, Balance Moisture. We are making this correction so that there will be no misunderstanding as to the contents. The Los Angeles Soap Company have received a great deal of encouragement from professional sprayers and growers who have tried other powders and are now using Mermaid Spray Powder and claim it is an exceptional product. The company will be glad to send full information to growers or those interested.

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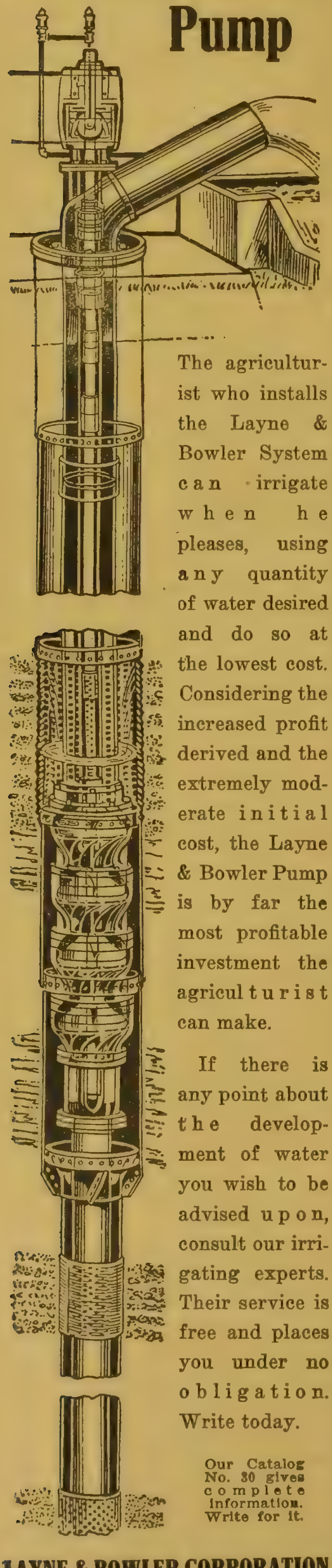

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LOS ANGELES, CAL.

Questions and Answers

THE EDITOR AND STAFF

Questions to be answered in this department should be received at this office one week before reply is expected. Write plainly on one side of the paper and sign full name and address. Unsigned communications receive no attention.

Money in Broilers

A Cultivator subscriber requests information regarding an account in an eastern magazine of a retired professional lady near Los Angeles who is making a large sum each year raising broilers. We have endeavored to locate this profitable broiler plant and referred the question to our poultry contributor, Mrs. J. A. Koethen, and she replies that perhaps it may not be wholly imaginary and calls to mind instances where certain people have for a time appeared to do well but the plants have ultimately been broken up. She adds: "The fact is there are sporadic successes but the broiler business as a specialty never succeeds permanently, as far as I can learn. It cannot, in the very nature of things, for the broiler specialist has to compete with the surplus cockerels from all the farms and back-lot poultry plants and all the commercial egg ranches. In the late winter and early spring, say from January till April, broilers bring good prices, 35 and often 40 cents a pound, live weight. This sounds pretty big but we have to consider that these broilers are hatched from 50-cent eggs so the profit is less than it seems. After the first of May the market is glutted with cockerels from everywhere, and there is no more profit in them. The only people who are in a position to make money from broilers, it seems to me, are the regular poultrymen who, having all their equipment ready, are able to get out broilers during the dull fall season as a sort of a side issue and get rid of them before spring hatching begins. I know of several who find this quite profitable. The man who should put all his money into equipment for raising broilers exclusively would have to make his profits for the first four months of the year cover the whole twelve months' expenses. I always suspect that people who say they have done so well don't figure carefully on the interest on investment, overhead charges, and all that sort of thing."

Silo

Kindly explain the filling, emptying and how to use a silo.—Subscriber, Newhall.

This is a long question, or rather one which leads to an answer requiring pages if the various details are given and it is now too late to make an extended article of interest for we presume there are no silos being filled this late in the season. In a word, we may say that corn, which is usually used for silage, is harvested when the grain is in the milk, is run through the cutter, cut into about one-inch lengths and a pneumatic elevator carries the freshly cut material into the silo, which is constructed of a size consistent with the size of the herd to be fed. As it is elevated and dropped into the silo it is thoroughly packed by two or three, or, in the case of a large silo, sometimes as high as a dozen men, tramping it down. If the corn is dry or the stalks ripened at all then water is added to be sure of sufficient moisture content. If thoroughly packed and the silo is built air tight after a few weeks of fermenting and heat which has been set up has destroyed the bacterial life, the silage, like canned fruit, will keep indefinitely but when exposed to the air it should be fed down every day and kept fresh for it will then very quickly decay. We have asked one of our contributors for an article as to value of silage and as to best crops to plant for it. This will be given within the next few weeks and will answer the question more intelligently and more fully. The matter of filling, however, will be a question for later consideration.

Alkali Spot

How can I reclaim a half-acre spot of land affected with white alkali? It dries out, crusts and cracks. Cannot get a good stand of anything planted on it. It is set to pear trees, some of which are looking well, others have died. There is no chance to drain. There is a stratum of sand ten feet down in which water stood before the level receded. Have been advised to use gypsum to neutralize alkali.—Subscriber, Santa Ana.

Gypsum would have no good effect on white alkali. If there is any black alkali present a liberal application of gypsum, say to the extent of a ton to the acre or even half that, will change the black alkali to white alkali, which is less caustic. We note you say there is no possibility of drainage but also say there is a stratum of sand ten feet from the surface. In such a case, with a plot of alkali in the center of a valuable place we would at least try the experiment of digging a shaft down to the sand, which we would board or curb up a few feet, covering with heavy plank and earth, and running drains from this shaft to various parts of the alkali plot. This would be somewhat expensive but might drain away the alkali and make this spot one of the most valuable on the ranch. Other than gypsum there is no chemical treatment within economic bounds.

Fertilizer Values

What is the plant food value of lima bean straw compared with horse manure?—Subscriber, Claremont.

Fresh farm manure contains about five pounds of nitrogen per 1000 pounds of material, about one pound of phosphorus and four pounds of potassium. Bean straw may contain as high as 15 pounds of nitrogen, one and seven-tenths pounds of phosphorus, and 11 pounds of potassium. This analysis would show the bean straw to be a much better fertilizing material than manure.

Aphis or Plant Lice

Is there anything which will kill pea lice?—Subscriber, Haywards.

The aphis or ordinary plant lice is one of our worst pests. It is easily killed but it is so wonderfully rapid in its reproduction that another crop comes on almost immediately to take the place of those which have been destroyed. A weak solution of tobacco extract sprayed over the plants will usually accomplish good results but it requires almost daily applica-

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All Leading Varieties

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of experience in the growing and handling of citrus nursery trees gives the buyer the advantage of starting out RIGHT, thus avoiding disappointment at the end of four or five years' labor in bringing the young orchard into bearing.

ANOTHER POINT TO CONSIDER

Growing a good tree is only part of having it do well after planting. Many a good tree is ruined in the taking up from the nursery and shipping. We give the best of service in the proper handling and delivering of our trees.

WRITE,

'phone or call on us before buying your trees. Tell us your wants and we shall be glad to give you the benefit of our wide experience as to planting, soil conditions, fertilizers, etc.

Our illustrated new booklet on citrus culture mailed to any address upon receipt of 25 cents.

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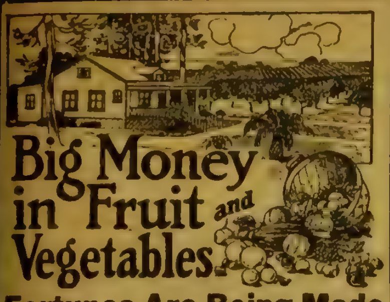
Teague trees are started right, grown right, and shipped right.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Our block includes Bing, Black Oregon, Black Tartarian, Burbank, Royal Ann, and other good varieties on Mahaleb and Mazzard Root. Write Us First.

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Red, Black and Purple Scale also the Red Spider and other insects, worms and bugs.

Does not hurt the plant or tree.

Quart, 20c; 2 quarts, 35c; gallon, 60c; 5-gallon can, $2.00, freight paid.

Special prices by the barrel.

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It is a good idea to keep the "lid" on the family jar.

tion for a time to effectually control the pest. If the plants are situated where they may be reached with a strong spray from the hose it will aid materially. If tobacco extract is used it should be in the proportion of about two pounds of the extract (40 per cent) to 200 gallons of water. If preferred, stems and refuse tobacco may be bought of cigar factories, these to be steeped in water in the proportion of one pound to four gallons. Keep down all weeds or useless plants on which the pest may breed.

Government Land

Can you give me any information in regard to government land in the Klamath Project in Siskiyou and Modoc Counties, which is to be open to settlers December 30?—Subscriber, Wasco.

Write Alfred H. Taylor, receiver of the United States land office, Susanville, California, for information as to government lands in that district.

Trade-marking Name

Please tell me what I should do to have a name copyrighted, where to apply, and what is the fee?—Subscriber, Escondido.

We assume our subscriber refers to trade-marking a name in this state for the sake of securing exclusive use of it for a ranch home name or for brand for any California product. Write Secretary of State Frank C. Jordan, of Sacramento, and ask for blank giving full instructions. We believe the fee is five dollars.

Spray for Scale

Please give best remedy for the destruction of black or red scale on young citrus trees. Will Bordeaux mixture do the work, and when is the best time to apply?—Subscriber, San Gabriel.

The best treatment for the scale mentioned is fumigation, but this is work requiring a specialist, whom you should be able to secure in your section or through County Horticultural Commissioner Wood. In sprays perhaps kerosene emulsion is the best, though a strong solution of soapsuds is helpful. The special spray number of the Cultivator of September 11, 1913, gives particulars as to the making of various sprays. The Bordeaux is of no value in spraying insect life. It is only a fungicide.

Tepary Beans

I have heard of dry land beans called Teparies. Where can seed be had and have they been placed on the market?—Subscriber, Yucaipa.

The Tepary has proved well adapted to California conditions. The seed may be had of any seedman advertising in the Cultivator. At present the price is running practically the same as that of small white navy beans but they are claimed by many to be superior to that bean and in time may command a higher price.

"That fellow is merely sowing his wild oats," said the apologetic friend. "Maybe," replied Father Backup, "but when you get to sowing wild oats you seem to lose sight of the value of rotating your crops."

Lose not your trust, be true;
  Awhile the trees were bare,
The laughing brook was silent,
  And flowers lay shrouded where
They bloom today. Be patient;
  Joy will return to you.

"A little bed of flowers,
A little coat of paint,
Will make a pretty home
Out of one that ain't."

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For less than half the cost of keeping an extra hand you can have your cows milked, your cream separated, and practically all your chores done by a

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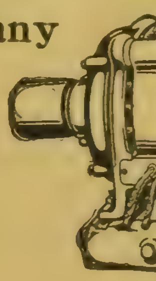

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The Rhubarb-Berry & Cactus Specialist.

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—drive the material on at high pressure and have non-rusting ball valves, porcelain-lined cylinders, Bean patented pressure regulators and many other distinctive advantages. On account of their low-down, compact, perfectly balanced construction they are as easily handled on hilly ground as on the level.

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Direct from mill to consumer.

Save the Middleman's Profit for Yourself.

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We will gladly quote you prices. Send in your list.

A few of our many low prices—

2/8 x 6/8 1⅜ 5XP Fir Doors @ $1.00 each.

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2/6 x 6/6 1⅜ One Light Sash Doors @ $1.50 each.

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Immediate mail replies cannot be given except where fee to Mr. Stanton is paid. When replies are wished in Cultivator address query to 115½ N. Broadway, Los Angeles.

Disposal of Estate

A man dying leaves a wife and children. He has some real estate and personal property, partly covered by debt. What disposition of same do the laws of California provide, there being no will or other paper of like import?—Subscriber, Orange.

If decedent leaves a wife and two or more children, property passes, after payment of debts, one-third to surviving wife and the remainder in equal shares to the children. If the estate is under $1500 it may all be set aside to the surviving family without payment of debts. In case of real property upon which family resides, a homestead may be set off for the use of the family.

Foreclosure of Second Mortgage

In foreclosure of second mortgage what is procedure and how long has mortgagor to redeem? During time of redemption who has possession of the property?—Subscriber, East Bakersfield.

Foreclosure of mortgage upon real property is had by filing complaint in the superior court of the county in which property is located. In case of second mortgage the title obtained by foreclosure is subject to the rights of the first mortgagee. The mortgagor has one year within which to redeem upon payment of the amount for which the property is bid in at foreclosure sale, together with one per cent per month interest thereon. The mortgagee does not by his judgment of foreclosure obtain title to the property until the expiration of the time for redemption, and therefore the mortgagor may remain in possession of the property during the period of redemption. There are provisions for the appointment of a receiver in cases of foreclosure of mortgages which are suitable on account of the expenses only in cases of large mortgages.

Bank's Lien

A buys for B a car of cattle and when cattle are delivered B pays for them. A has the cattle sold to C (B could not be there to get the money from C). B tells A to collect the money from C. A gets C's check for the cattle made payable to A. Before A gets C's check he gives B his check for the amount the cattle came to. Tells B he will put C's check in the bank to his credit, so B's check will be paid. A owes the bank money. B did not know it and when he presented check bank would not pay the money. A never had any money in the cattle. Can B collect from the bank?—Subscriber, Sultana.

A banker has a lien, depending upon possession, upon all property in his hands belonging to a customer. Your question presents the proposition that the money against which the bank enforced its lien did not in this case belong to the depositor. The weight of authority is in favor of your action against the bank, but there is strong authority to the effect that where you permitted the agent to deal with the property as his own, the liability of loss would be imposed upon you.

Filing on Water

Two years ago last May I filed on 160 acres of government mountain land. Am living on same. There is a canyon with water in it on this land, but to get the water where it would do me the most good it would have to be raised 200 or 300 feet, which I have not the means or time to do at present. Would like to know if anyone by filing or in any other way could deprive me of my right to the water, and if they can, what it is necessary for me to do to secure my right.—Subscriber, Chatsworth.

Anyone by filing upon unappropriated water and putting same to use may obtain an exclusive right thereto. Appropriation must be for useful purposes. As between appropriators, first in time and first in right. Persons desiring to appropriate water must post a notice in writing in a conspicuous place at point of intended diversion, stating therein that he claims the water there flowing to the extent of a given number of inches measured under a four-inch pressure, purposes for which he claims it, place for intended use, the means by which he intends to divert it, the size of the flume, ditch or pipe in which he intends to divert it. Copy of this notice must within ten days after its posting be recorded in the office of the county recorder and 60 days after posting of notice claimant must commence construction of his works and prosecute same uninterruptedly to completion.

Filing on Water

About 20 years ago I filed a water right on a spring near my place but located on the land of a neighbor with her consent. I placed two filings along the creek and one at the spring. Within ten days I filed copy of notice with the county recorder and inside of 30 days had the water piped to my house and barn. Can I hold this right if the present owner should sell out?—Subscriber, Lakeside.

Your proceedings to acquire the water right were correctly taken and furthermore the land of your neighbor has become charged with your right through prescription; the land being answerable therefor it makes little difference as to the ownership.

Dissolution of Partnership

I have been in partnership for two years. We have now disposed of and divided everything except the livestock. I have offered to buy his interest or sell him mine on a fair and just basis, but he will neither buy nor sell. Is there any legal means by which I can bring about a settlement?—Subscriber, Los Angeles.

Yes, you may bring action for dissolution of partnership and in such action have an accounting taken and the assets of the partnership sold and divided.

Property to Survivor

When I bought my ranch the deed was made out in my name. At my death I wish my wife to have it all and she wishes to leave all to me should she die first. Now, how can we bring this about?—Subscriber, Fair Oaks.

There are three ways. First and best you and your wife can each make wills leaving the property to the other in case of death; second, the property can be deeded to a third person who can deed the property back to you and your wife, the deed reading in the name of you and your wife with the clause "as joint tenants with right of survivorship;" third, you and your wife can join in a declaration of homestead, whereupon, upon the death of either the property goes to the other. There are other methods, as each making a deed to the other, but as a deed is not valid until delivery and such delivery must be within the lifetime of the grantor, litigation frequently arises upon such methods.

Division of Property

A purchased some real property, taking title in his own name. A allows B to have half the land if B will pay half the money. On back of deed it was written by the notary that B should have a half interest in the land. B lives on the ranch and has stood all expenses such as fencing, clearing, building, etc., for the past three years. A does not live on the place and B has hired all work done. The understanding was that B should pay half of everything. Can B force A to divide land?—Subscriber, Orosi.

Yes. B should bring suit alleging a partnership between A and B in respect to the land, ask for an accounting and that the land which is the capital of the partnership be divided or sold and the proceeds divided. It is not necessary in an action of this kind that B have written evidence of his interest.

Dedicated to Public

I bought ten acres of land. It has a county road on the south line. The former owner verbally agreed to give ten feet on the east and west line for the convenience of parties living adjoining on the north. I want to fence to my line on the east and west. Have I the right to do so ? The parties to the north have deeded roads on their fronts and only use the roads along my line for a short cut to get south. One of them has been in use about eight years and the other about seven. —Subscriber, Orosi.

These cases rest so largely in evidence that it is difficult to give a definite statement, but it is quite probably true that your grantor has dedicated these strips along your land to the public for use as roads and that the public by their use thereof for a period of seven or eight years have acquired rights thereto which cannot now be defeated. If this is true you could not fence in. But as these cases frequently turn out unexpectedly it might be worth while for you to try it out.

CULTURE OF CITRUS ATTRACTIVE

In addressing the Kern County Farm Bureau in its recent meeting at Bakersfield Dr. Coit said:

"California citrus culture, among all horticultural industries, is peculiar in that the people who have built it up have been, in so many cases, retired business and professional men. Men who lost their health in the process of gaining wealth have bought and developed citrus properties, the management of which, by requiring life in the open sunshine and dry air, has resulted in renewed health and steadied nerves. These people brought the industry much needed capital, commercial habits and business ability.

"The result has been an industry characteristically American in spirit and new in methods. European methods are practically ignored in systems of cultivation, irrigation and pruning. In their readiness to organize among themselves along business lines and work together for the better picking, packing and marketing of the fruit, the California citrus growers are probably in advance of any other class of fruit growers.

"Citrus culture in California will always be a popular occupation because it appeals to a man from so many sides. It appeals to his love of the beautiful; beckons him to healthful outdoor life; stimulates that inborn desire in man to make things grow; satisfies his appetite and last but by no means least, it tempts him with offers of large financial reward. Successful citrus culture calls for a combination of the science and art of horticulture; requiring both skill and industry, it gives healthful occupation to the mind as well as the body."

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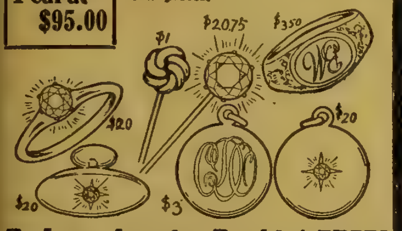

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The Household Department

THE FARMER'S WIFE—THEN AND NOW

Written for California Cultivator
By Mrs. Lee

With cackle and crow, at break of day,
The poultry call the farmer's wife,
And she must rise without delay
For hers is a busy life.
She feeds the ducks, she feeds the hens,
She feeds the farmer too,
She skims the milk, and feeds the pigs,
But yet she is not through.

She feeds the calf and the little chicks,
She milks the mooley cow;
Although it is cold and rainy too,
It must be done somehow.
The children must be washed and fed
And started off to school;
There is so much that must be done,
She has learned to work by rule.

Then there are dishes to be washed
And floors to sweep and scrub,
The washboard sings its merry tune
Of rub-a-dub-a-dub.
There is a garden she must tend,
And there's a baby too;
Although she hurries all day long
She never does get through.

But now, alas, she has rebelled,
She vows she'll work no more,
She'll neither bake, nor brew, nor mend,
Nor do a single chore.
She's off to town from morn till night,
She is the gayest ever seen,
She takes the children now to school
In a brand new limousine.

MUSHROOMS AND THE CARTER FAMILY

THE Carters had been distinguished for nothing in particular until Elizabeth, prowling among the shelves of the circulating library, happened upon a perfectly clean, new book. She seized it with delight.

"Why!" exclaimed Elizabeth. "A new book!"

"You see," exclaimed the librarian, almost apologetically, "Miss Gray, who taught here last year, accidentally carried off two of our novels. Instead of returning them, she had this larger volume sent to us direct from the publishers. It's a work on mushrooms."

"Who," asked Elizabeth, "wants to read about mushrooms?"

But because the book was clean, Elizabeth carried it home. From that day the Carters began to lead a new life.

The mushroom book was profusely illustrated. Every one of the family read the opening chapters with keen interest. Then out they sallied in quest of mushrooms. The entire family took part in the mushroom hunt.

Mr. Carter found the "giant puffball" growing unmolested in the stubbly field through which he passed every day on his way to work; and the bigger the puffball, the greater was Mr. Carter's joy. Mrs. Carter found the "fairy ring" flourishing, hitherto unnoticed, in her own back yard. Demetrius discovered the clustered caps of the gray "inky," or Coprinus atramentarius—Elizabeth insisted that everyone should use the Latin names, on the shaded path leading to the pond. Dorothy found scattered specimens of the smooth lepiota on the Deerton avenue lawns. To Lytle, the Carters owed the discovery of the spectacular "shaggy mane." As for Elizabeth, she fared forth to the forest; when she at last returned, the large basket on her arm contained no fewer than 49 varieties of fungi; some of these tallied obligingly with the descriptions in the book; others defied classification. Some were evidently edible, some doubtful, some impossible; all were interesting.

Thenceforth, mushrooms, fresh, dried, or decomposing, occupied most of the available surface in the Carter home. If you reached in the dark for matches, you encountered cold, clammy mushrooms. If you searched for a book, it rested under a choice specimen of fungi. If you wished to open the old-fashioned square piano, it was weighed down with Elizabeth's entire collection of 92 varieties. If you needed a box or a basket, it was already filled with Marasmius oreades, drying for winter use. Then, too, Elizabeth spent any spare moments in which she was not pursuing living specimens, in making "spore prints."

"You cut off the stem," said Elizabeth, in explanation of the process, "place the cap, gill side down, on a sheet of white paper under a cup or glass, and wait. The spores, falling on the paper, make a perfect print of the gills."

These prints, of course, occupied considerable space; and soon half the dishes in the Carter pantry were placed upside down over spore-shedding specimens. Moreover, the atmosphere of the Carter house became permeated with a musty, fungian odor, which was far from pleasant.

The Carters began, doubtfully at first, then with greater assurance, to prepare, cook and serve their mushrooms. Unfortunately, each member of the family remained loyal to the variety of his own discovery. Mr. Carter, for example, averred that no other fungus compared with the puffball. Mrs. Carter scoured her own and all the neighbors' lawns for fairy rings. Demetrius was loud in his praise of the gray inky and its little brown sister, Coprinus micaceus. Dorothy extolled the snowy lepiota, whereas to Lytle the shaggy mane was the only agaric fit for human consumption. These preferences, of course, rather complicated the task of preparing mushrooms for the Carter table. Fortunately Peter, the Carter cat, ate all varieties with equal pleasure—and equal impunity; so none went to waste.

As Elizabeth brought home new specimens every day, and as most of them, according to the book, were edible, the family experimented daily—sometimes three times daily—with broiled, fried, or stewed mushrooms.

The only time the Carters were made seriously ill was the day when Elizabeth cooked seven unknown varieties at once to serve in ramekins, as a side dish with lobster salad.

"I'm positive," asserted Mr. Carter, afterward, "that it was merely the lobster."

The Carters had always been hospitable. People had been accustomed to

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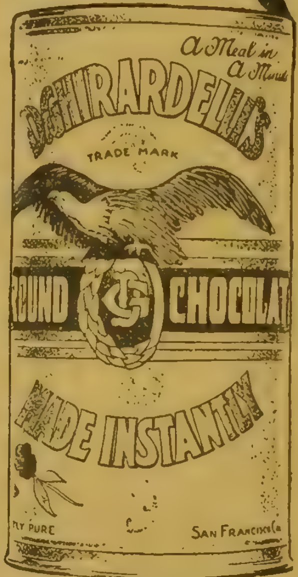

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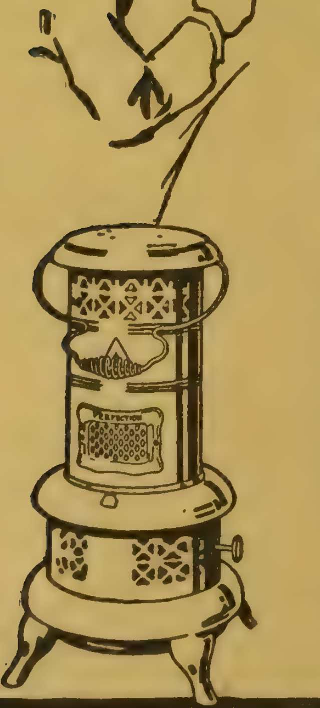

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"drop in." There was always a "company place" at the ample table. It was now the chief delight of the Carters to serve mushrooms in variety to all their visitors. But that proved a short-lived pleasure, for, soon after the arrival of the book, the company chair began to lack occupants. Instead of "dropping in," the company dropped off. Moreover, faithful Jennie, who for many years had "come in by the day," began to make excuses for an alarming number of absences. Life with Jennie and life without her proved very different affairs. And Jennie would give no reason for her defection.

Of course the mushroom book "expired" and had to be renewed. The Carters took turns in drawing it from the library—their cards fairly bristled with the number 209. Still the fascinating mushroom held its sway; for each week brought new varieties, and every shower was followed by a more alluring crop.

Then came the news of Aunt Julia's impending visit. Aunt Julia was a personage. You received her in fear and trembling, you entertained her in perturbation, you drew long sighs of relief when the train, bearing her departing person, disappeared safely round the last visible curve. Then you waited for the letter that was sure to follow her departure. If anything about her visit had displeased her—and something always did—the candid lady never failed to mention it. And now, for the second time that year, Aunt Julia was about to visit the Carters; but, for once, the family seemed almost pleased at the news.

"I shall get up at dawn," announced Mrs. Carter, "to scour the country for fairy rings. So many other people are eating them now that it makes them harder to find."

"Never mind," said Mr. Carter. "There ought to be several big puffballs ready by now. She'll probably prefer those—they fry such a fine brown."

"I'll bring in all the lepiotas I can find along the avenue," remarked Dorothy.

Demetrius and Lytle said nothing, but no one was surprised when one brought "inkies" in a shoe box, and the other returned with "shaggies" in a yellow paper bag.

As for Elizabeth, she manufactured pickles from Clavaria formosa, the coral fungus; and she exhibited nine varieties of agarics that as yet had not been tried.

"So long as Aunt Julia doesn't know they're doubtful," said Elizabeth, "she'll be able to eat them just as if they were edible."

Before the visitor had removed her gloves, the momentous question was asked.

"Do you," inquired Mrs. Carter, "like mushrooms?"

"Why, yes," replied Aunt Julia without enthusiasm. "They're not so bad with beefsteak."

Mrs. Carter in all her dealings with her household, tried to be impartial. She could not serve Dorothy's fungoid offerings and slight those of Demetrius. So she finally evolved a menu that read as follows:

Shaggy-mane soup. (Lytle.)
Beefsteak, with broiled lepiotas. (Dorothy.)
Stewed inkies. (Demetrius.)
Potatoes, with fried puffballs. (Father.)
Pickled clavarias. (Elizabeth.)
Mushroom catsup, mixed varieties. (All of us.)

"I'll have to save my fairy rings for luncheon tomorrow," she said, with a sigh. "They keep better than any of the others."

Aunt Julia, although pressed on all sides, declined a second helping of any of the foregoing dishes, and ate rather sparingly of her first allotment; to tell the truth, her face assumed a slightly peculiar expression; but Peter, the cat, regaled himself afterward from her plate.

"I'm not hungry," explained Aunt Julia, accepting a third cup of tea, "but I am thirsty."

The visitor, who usually remained for at least three weeks, departed rather hastily after a stay of three days.

"But," said Mrs. Carter, when Aunt Julia announced her intention of leaving by the ten-o'clock train, "Elizabeth has at last discovered several fine specimens of the edible boletus—most of the boleti, you know, are considered poisonous—and we're going to saute them in olive oil for luncheon."

"Neverless," returned Aunt Julia, "I shall go at 10:00; and you needn't trouble to put up any lunch for me—I'll get something on the train."

The inevitable letter from Aunt Julia came in due time.

"When I said I liked mushrooms," wrote that candid lady, "I meant canned ones. No others are fit to eat. Moreover, as a topic of conversation, the mushroom has no interest for me. I am sending you a cookbook, entitled, 'Forty Ways to Cook a Cabbage.' Please use it. Affectionately, Aunt Julia."

Mrs. Carter learned that same day that Mrs. Blake, her next-door neighbor, was employing the missing Jennie.

"Why," asked Mrs. Carter, leaning over the fence to interview Mrs. Blake, "doesn't Jennie come to me?"

"She says she doesn't like your meals," replied Mrs. Blake, frankly. "She's afraid of being poisoned."

Two blows in one day, but that was not all. Aunt Julia, discovering suddenly that she had left her precious cameo brooch deftly hidden under the extra cake of soap in the washstand drawer, returned to rescue it.

The Carters, of course, apologized for their too lavish use of agarics, and assured the visitor that, should she stay, not a single mushroom would they serve—or mention.

"I'll stay for one meal," she replied, "but no more. I couldn't think of depriving you of your favorite food and your only topic of conversation. Besides, I've accepted an invitation for tomorrow."

"To tell the truth," confessed Dorothy, when the family sat down that night to an absolutely mushroomless meal, "I'd rather eat turnips than the finest lepiota ever grown."

"And I," said Elizabeth, "should like mushrooms if it were not for the mushroom flavor. It—it goes against me."

"I never did like 'em," declared Lytle, "but it's great fun to find 'em popping up all over the place."

"I pride myself on being able to eat anything," remarked Mr. Carter, "but I almost balked at mushrooms. It was only by exercising all my will power that I succeeded in downing those exceedingly slippery inkies."

"As for me," said Mrs. Carter, "you may have the dreadful truth. Perhaps you've noticed that Peter is always under the table at meal times. Well, I've never eaten a single mushroom—I fed all mine to the cat!"—Youths' Companion.

IDEAS FOR THE COOK

Written for California Cultivator
By Isabel Cottle

Breakfast

Ripe Oranges
Farina with Chopped Dates
Flannel Cakes
Ham and Potato Patties
Coffee

Lunch or Supper

Corn Chowder
Cold Roast Beef
Macaroni with Brown Sauce
Hot Buttered Beets
Roll Jelly Cake Tea

Dinner

Flank Steak, Braised Brown Bread
Cottage Cheese
Lettuce Hearts Tomato Mayonaise
Mince Pie Coffee

Flank Steak, Braised

Score a flank steak, dredge with flour, dot with butter and place in an oblong pan. Over this place a thick layer of thinly sliced raw potatoes; then a layer of thinly sliced onions; over the whole pour two cups stewed tomatoes. Cover tightly and place in the oven. Cook slowly two and one-half or three hours. One-half hour before the meat is done remove the cover and add a layer of boiled rice, more moisture if needed and cook uncovered the remaining time.

Flannel Cakes

Sift together two and one-half cups of flour, one-half teaspoon salt and four teaspoons baking powder. Add the yolk of two eggs beaten and mixed with two cups milk, and lastly the stiffly beaten whites of the eggs.

Macaroni with Brown Sauce

Break one-half package of macaroni into inch lengths, cover with boiling salted water and cook 20 minutes. Drain. Melt two tablespoons butter, add two tablespoons flour and when well browned add one cup stock, gradually stirring all the time, one teaspoon salt, one tablespoon grated onion and, if desired, one tablespoon tomato catsup and the macaroni. Cook over hot water 20 minutes.

Brown Bread

Mix well and sift one cup each, cornmeal, rye and graham flour, one-and three-fourths teaspoons soda and two teaspoons baking powder. Add one-half cup brown sugar, one-half cup molasses and two and one-half cups sour milk. Steam three hours, or one and one-half hours and bake one hour in oven.

RAISIN RECIPES.

Raisin Souffle.

Steam a cup of raisins until soft and plump, chop fine, add three tablespoons of powdered sugar, ten drops of vanilla and mix very lightly with the beaten whites of four eggs, in which have been whipped a pinch of salt and a quarter teaspoon of sifted cream of tartar. Turn quickly into a buttered dish, dust thickly with powdered sugar and bake in a quick oven 20 minutes. Serve at once with a soft custard made of the yolks of the eggs.

Raisin Pie.

Stir together one cup of cold water, one cup of sugar and one level tablespoon of cornstarch. Add the grated yellow rind and juice of one lemon, a cup of chopped raisins, and part of the lemon peel chopped fine. Cook until the cornstarch is well thickened, stirring constantly to prevent burning if a double boiler is not used. While this is cooling prepare the crust. Bake either with or without an upper crust. A meringue may be used occasionally for the sake of variety.

Steamed Raisin Bread Pudding.

Two cups of bread crumbs, one cup of New Orleans molasses, one cup of hot water on the crumbs, one cup of flour, one cup of raisins, one large teaspoon of soda dissolved in the hot water. Steam two hours.

Frozen Raisin Dessert.

Beat the yolks and the whites of two eggs separately and add them to three cups of sugar mixed with two quarts of sour skim milk and add this to three cups of plumped and chopped raisins. When partly frozen add the juice of two lemons.

Raisin Cookies.

Two cups sugar, one cup lard, two cups raisins, two eggs well beaten, one cup milk, two teaspoons baking powder and a pinch of salt, one tablespoon mixed spices and enough flour to roll nicely. Cut and bake.

Raisin Potato Cake.

One cup butter, two cups sugar, one cup mashed potatoes, one-half cup milk, one cup chopped walnuts, one cup California seeded or seedless raisins, one-half cup chocolate, four eggs, one-third teaspoon each cloves, cinnamon and nutmeg, two teaspoons baking powder. Bake in a medium oven.

Raisin Spice Cake.

Dissolve one teaspoon soda in one tablespoon boiling water and add to one-half cup molasses. Add one cup thick sour cream, one cup brown sugar, and three and a half cups flour. Beat thoroughly. Add one tablespoon each cinnamon and allspice and one pound California seeded or seedless raisins chopped fine and well dredged with flour. Bake in moderate oven one hour.

Raisin Sandwiches.

Chop fine a cup of seeded raisins and a cup of nuts, and mix them with the white of an egg, well beaten and seasoned with salt. Spread this between thin slices of buttered bread. Do not prepare until you are ready to use them.

Chocolate Raisins.

Chop fine some raisins and work into them a scant third of their weight in granulated sugar, using a few drops of strained honey to bind if necessary. Mold with the fingers into any shape desired and dip into melted, unsweetened chocolate. Lay well apart on waxed paper until firm.

Rhubarb and Raisins.

Add seeded raisins when stewing rhubarb and the result will prove a success.

To clarify vinegar that is muddy or off color try adding about a teaspoonful of cream of tartar to each half gallon of vinegar.

Lessons in courtesy begin with manners at the table, with the salutations of the day, with the acknowledgment of thankfulness, and go on through all sorts of consideration and unselfish effacement and self-sacrifice to the very heights of prayer and praise. For religion, on its finer side, is the true courtesy of man toward God.—Dean Hodges.

It may be that what people mean by "good old times" is the neighborliness and human sympathy that was so apparent in those days old people so vividly remember. If that be true, let us revive the "good old times," that our days may be remembered.

To be free from evil thoughts is God's best gift.—Aeschylus.

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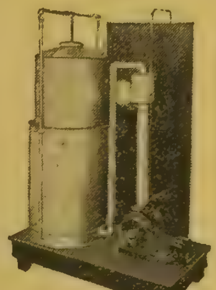

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San Francisco-Los Angeles Produce Markets

Los Angeles Market

LOS ANGELES, Dec. 2, 1914.

The prices given below, except where otherwise noted, are those made by wholesale or commission houses to retailers, and are intended to give producers the range of the market rather than an indication of prices which they will secure. Jobbers' quotations to producers are not given.

BUTTER

Heavy arrivals of exceptionally fine stock caused butter to decline heavily on Tuesday, and 5 to 6 cents was knocked off of the various grades.

Prices to trade 4 cents above following quotations:

Creamery Extras	30
First	28
Country	23
Ladle	22

CHEESE

Prices to trade, 1 and 2 cents higher:

California Fresh	14½@15
Imported Swiss	38@40
Eastern Daisy	18@18½
Longhorn	18½
Oregon Triplets	17@17½

EGGS AND POULTRY

Eggs are also declining, due in part to report from San Francisco that prices there are lower.

Prices to trade, 3 cents higher than following quotations:

Fresh ranch, case counts	43
Candled	47
Northern Case Counts	45
Petaluma-Santa Rosa	46

Prices to producers:

Hens, lb.	15@18
Roosters, old	9
Broilers, lb.	24
Fryers	20
Roasters, lb.	15
Turkeys	18@20
Ducks	18@20
Geese	17
Squabs, doz.	2.00

LIVE STOCK

The following quotations are f. o. b. Los Angeles on all stock:

Hogs, 175 to 200 lbs., per cwt	8.00
Prime Steers	7¼@7½
Heifers	6¼@6½
Calves, lb.	8½@9
Sheep—	
Ewes, head	4.50
Wethers	4.50@5.00
Lambs, head	4.50@4.75

POTATOES

Wholesale selling price:

Idaho	1.15@1.25
Sweets, lug	75@85
Northern Burbanks, cwt	1.20@1.30
Salinas	1.90@2.00
Shimas	1.35@1.45
Lompocs	1.90@2.00

ONIONS

Wholesale selling price:

Australian Brown, cwt	1.35@1.50
Silverskins, cwt	1.85@2.00
White Globe	2.15@2.25
Yellow Danvers	1.35@1.50
Garlic	16@17

VEGETABLES

Wholesale selling price:

Artichokes, Northern, doz	60@1.00
Beets, doz.	30@35
Beans, String	5@7
Lima	5@6
Cabbage	65@75
Carrots, doz.	30@35
Cauliflower, doz.	50@60
Celery, crate, northern	2.20@2.35
Local	1.75@2.00
Corn, Sugar, box	60@65
Cucumbers box	75@1.00
Egg Plant	4@5
Escarole, doz.	40
Horseradish, lb.	15@16
Leeks, doz.	35@40
Lettuce, crate	90@1.10
Mint, doz.	35@40
Parsnips, doz.	25@30
Okra, lb.	9@10
Onions, Green, doz. bunches	15@20
Oyster Plant	30@35
Parsnips, doz.	25@30
Peas, lb.	7@10
Peppers—	
Bell, lb.	3@5
Chili, lb.	4
Pumpkins, lb.	1½@2
Radish, doz.	20@30
Rhubarb, box	80@85
Spinach, doz.	20
Squash—	
Summer, lug	60@75
Crookneck	30@40
Hubbard, lb.	1¼@1½
Turnips	30@35
Tomatoes, lug	70@80

FRESH FRUIT

Wholesale selling price:

Apples—	
Bellflowers	70@90
Jonathans	1.35@1.50
Spitzenbergs	1.25@1.35
Rome Beauty	1.35@1.50
Pearmains	75@90
Bananas	3½@4
Berries—	
Strawberries, basket	10@15
Casabas, doz.	1.40@1.65
Cranberries, bbl.	7.75@9.00
Figs, box	1.35@1.85
Grapes—	
Cornichon	1.25@1.30
Malagas, crate	1.25@1.35
Tokays, lug	1.35@1.50
Red Emperors	1.40@1.60
Guavas, basket	3@4
Pears, Bartlett, lb.	7@9
Seckel, box	1.30
Flemish Beauty	1.85@2.00
Persimmons, lb.	3@7
Pineapples, lb.	6@6½
Pomegranates, box	1.50
Watermelons, lb.	1½@2

CITRUS FRUIT

Wholesale selling price:

Lemons	1.25@3.00
Grapefruit, Seedless	2.20@2.35
Navels	2.50@2.75
Limes, basket	75@1.00

DRIED FRUITS

Wholesale prices to retailers are:

Evaporated Apples, Fancy, lb. boxes	6¼@7½
Apricots	8½@10
Nectarines	12½
Peaches	5½@6
Pears	8@12
Prunes	5¾@17
Plums	10

NUTS

Prices named by **California Walnut Growers' Association** are:

No. 1	16½
Budded Walnuts	20
Jumbos	19
No. 2	12
Culls	9

Prices fixed by **California Almond Growers' Exchange, f. o. b. California.**

Almonds—	
Nonpareil	21
I X L	20
N P U	19
Drake's Thinshell	15
Pecans	17
Peanuts—	
California, Raw	6
Japan	7½
Eastern	7½
Rice Corn	5.00@5.25

HONEY

Wholesale selling price:

Comb, Fancy, Water White	14
White	12
Light Amber	11
Extr. Water White	7
White	6
Light Amber	5½
Beeswax	32

RICE

Wholesale selling price:

California	4.75@5.00
Broken	3.50@3.75

BEANS

Wholesale selling price:

Producer's price not far from one dollar under these quotations:

Limas	5.60@5.75
Lady Washington	5.15@5.25
Pinks	4.15@4.25
Black Eyes	4.90@5.25
Lentils	8.00@9.00
Navy	5.25@5.35
Small White	4.90
Garbanzos	6.00@7.50

HAY

Hay still remains stationary but unless rains come soon a material advance will be made.

Buying prices f. o. b. cars Los Angeles:

Barley	10.00@11.00
Wheat Hay	10.00@11.00
Tame Oat	11.00@13.00
Alfalfa	9.00@11.00

GRAIN

Wholesale selling prices f. o. b. Los Angeles:

Corn, Yellow	2.20
Corn, White	2.30
Wheat	2.15
Oats, Red	1.85
Oats, White	1.65
Kaffir Corn	1.90
Millet	3.75
Popcorn	4.75@5.00
Egyptian Corn	2.05
Barley Seed	1.45
Milo Maize	2.00
Cal. Seed Oats	2.25
Sunflower Seed	5.25@5.35

FEED STUFF

Wholesale selling prices f. o. b. Los Angeles:

Bran, Heavy	1.55
Alfalfa Meal	1.95
Alfalfa Syrup, per cwt.	1.05
Beef Scraps	3.00@3.10
Beet Pulp	1.25
Cracked Corn, cwt.	2.25
Cracked Wheat, cwt.	2.30
Cotton Seed Meal	1.85
Bloodmeal	3.60@3.70
Bone Meal	2.00
Meat Meal	3.00
Bone, Green	1.95@2.05
Charcoal	1.90@2.00
Oil Cake Meal	2.05
Fish Meal	3.15@3.25
Rolled Oats	1.90
Rolled Barley	1.35
Middlings	1.85
Feed Meal	2.30
Oat and Wheat Middlings	1.60

San Francisco Market

SAN FRANCISCO, Dec. 1, 1914.

The prices given below, except where otherwise noted, are those made by wholesale or commission houses to retailers, and are intended to give producers the range of the market rather than an indication of prices which they will secure. Jobbers' quotations to producers are not given.

BUTTER

Prices to trade, 4 cents above following quotations:

Extras	31½
Prime Firsts	28
Firsts	27
Seconds	24

CHEESE

Wholesaler to retailer.

Oregon Y. Am.	16
Young America	15@15½
California Flats	10@14
Cheddar	20
Oregon Twins	14½

EGGS AND POULTRY

Prices to trade 3 cents higher than following quotations:

Extras	45
Select Pullets	33½
Storage Extras	27½

Price to producer:

Hens, lb.	15@18
Eastern	16@19
Fryers	19@20
Roosters, old	12
Roosters, young	16@17
Broilers	19@21
Geese	2.00@3.00
Squabs	2.50@3.00
Belgian Hares, lb.	9@10
Turkeys	17@21

LIVE STOCK

San Francisco prices, gross weight:

Steers	4@7¼
Cows and Heifers	3@6½
Calves, lb., live weight	6@9½
Hogs	5@7¾
Wethers	6@6¼
Ewes	5¼@5¾
Milk Lambs	7@7½

POTATOES

Wholesale selling price:

Alvarados	1.15@1.30
Delta Burbanks	75@1.00
Salinas Burbanks	1.50@1.60
Sweets, cwt.	1.35@1.50

ONIONS

Wholesale selling price:

Oregons	1.00@1.25
Yellow, sack	75@90
Bermudas	1.00@1.25
Garlic, new	10@12½

VEGETABLES

Wholesale selling price:

Beans—	
Wax	3@7
Strings	4@7
Limas, lb.	5@8
Brussels Sprouts, lb.	4@4½
Cabbage, cwt.	1.00@1.25
Carrots, sack	30@40
Celery, doz.	20@25
Corn, Green, sack	1.00@1.25
Cucumbers, lug	40@75
Egg Plant, lug	25@40
Lettuce, crate	65@1.00
Peppers—	
Bell, lug	30@40
Chili, lug	50@75
[illegible]	[illegible]
Squash, sack	40@50
Tomatoes, lug, Delta	40@50
Santa Clara	40@75

FRESH FRUIT

Apples—	
Bellflowers	65@75
Spitzenbergs	50@90
Jonathan	40@75
White Winter Pearmains	50@65
Newtown Pippins	50@75
Bananas, Hawaiian, bunch	1.25@2.00
Cranberries, bbl.	8.00@8.25
Grapes lug	80@1.00
Huckleberries	5@8
Pears—	
Winter Nelis, wrapped, box	1.25@1.50
Other varieties	35@75
Pomegranates, box	50@1.00
Pineapples	2.75@3.25
Persimmons	50@80
Quinces, box	25@40

CITRUS FRUIT

Wholesale selling price:

Grapefruit, Seedless	1.75@2.50
New crop	2.00@2.75
Lemons	1.75@4.00
Lemonettes	1.00@1.75
Limes, case	3.00@5.00
Navels	2.00@2.50
Valencias	2.00@3.00
Tangerines, halves	1.50@2.00

DRIED FRUITS

Wholesale prices are:

PRUNES—1914 crop, bulk basis: 30-40s, 6c; 40-50s, 5c; 50-60s, 5c; 60-70s, 5¼c; 70-80s, 5¼c;80-90s, 5c; 90-100s, 5c. 1913 crop worth practically same prices. The above are for both Santa Clara prunes and stock from outside sections.

Other Fruits, 50-lb. boxes—	Standard	Ch.	Extra Ch.	Fcy.
Evaporated apples	...	4¾	5	5¾
Apricots	7½	8	8½	10
Peaches	3½	4	4¼	5½
Pears	7	8	9	10

RAISINS

RAISINS—The following prices are f. o. b. Fresno, as given out by the Associated Raisin Company for November shipments and are guaranteed against a decline till December 31st: Fancy seeded, 16-oz., 7c; 12-oz., 5¾c; bulk, 6c; choice seeded, 16-oz., 6¾c; 12-oz., 5½c; Thompson seedless, No. 1, 16-oz. pkgs., 7⅜c; 12-oz., 6c; 50-lb. cases, 6¼c; loose Muscatels, 1-crown, 5½c; 2-crown, 5½c; 3-crown, 5¾c; 4-crown, 6c; Sultanas, 50-lb. cases, 5½c; bulk, layers, 50-lb. bxs., $2.75; in 20-lb. bxs., 6-crown, $2.75; 5-crown, $2.25; 4-crown, $1.60; 3-crown, 5-lb. bxs., on all bulk stock, 50c additional; 10-lb. bxs., 25c additional. Cartons—Clusters, 20 to a case, No. 1, $1.70; No. 2, $2.10; No. 5, 4 to a case, $2.25. Local representatives of the association are asking about ¼c higher, while several of the largest packers are quoting ½c under these figures.

NUTS

ALMONDS—Prices fixed by Almond Growers' Exchange to the trade, f. o b. California:

Nonpareil	21
I X L	20
Ne Plus Ultra	19
Drakes	16

Wholesale selling price:

Peanuts—	
Unpolished	5@8
Polished	6@6½
Japanese, Shelled	6¼@6¾
Italian Chestnuts	6½@7

BEANS

Wholesale selling price:

Limas	5.40@5.50
Lady Washington	3.60@3.75
Pink	3.50@3.60
Black Eyes	4.10@4.30
Cranberry	4.00@4.10
Small White	4.40@4.50
Garbanzos	5.50@6.00
Large White	4.25@4.35
Bayou	5.00@5.10
Manchurian Speckled Bayous	3.50@3.75
Manchurian Butters	3.90@4.10
Manchurian Cranberry	4.00@4.25
Red Mexican	545@5.55
Red Kidney	5.50@5.75
Horse Beans	3.00@4.00
Bayou, Mexican	4.25@4.50

HONEY

Comb, Water White	14@16
Amber	10@12
Dark	7@10
Extracted White	7@9
Light Amber	6½
Dark	4@5½
Beeswax	27@32

HOPS

1914

Sacramento Valley	8@10
Sonoma-Mendocino	9½@11½
Oregon Clusters	9½@11½

HAY

Under date of Nov. 28, Scott, Magner & Miller say:

Receipts of hay for the past week were 2640 tons, bringing our arrivals up to about the same as week before last and an increase of about 1000 tons over last week. The alfalfa market

WEATHER CONDITIONS

For Week Ending November 28, 1914

Report from the various stations of the U. S. Weather Bureau, by Geo. H. Wilson, director, San Francisco:

	Rainfall Data			Temperature Data	
	Past Week.	Seasonal to Date.	Normal to Date.	Maximum.	Minimum.
Eureka	1.20	8.07	9.10	60	42
Red Bluff	.26	1.83	5.30	70	38
Sacramento	.18	1.26	3.38	68	42
San Francisco	.04	.52	3.85	68	48
San Jose	.08	1.06	3.00	72	34
Fresno	.00	.58	1.95	76	40
Independence	.00	.40	1.90	80	28
San Luis Obispo	.00	.20	3.40	84	38
Los Angeles	T	.49	2.17	86	52
San Diego	.00	1.90	1.29	80	50

T means trace.

continues in oversupply. There will probably be a change in this when the rains come. Straw continues low in light demand.

We quote the average wholesale prices on carload lots on today's market as follows:

Fancy Wheat Hay, lt. bales	12.00@13.00
No. 1 Wheat or Wheat and Oat	9.00@11.00
No. 2 Wheat or Wheat and Oat	6.00@8.50
Choice Tame Oat	10.50@12.00
Other Tame Oat	6.00@9.00
Wheat, Cal. Club	1.95@2.00
Barley	5.00@7.50
Wild Oat	6.00@8.00
Alfalfa	6.00@9.00
Stock Hay	4.50@5.00
Straw	30@45

GRAIN

Alfalfa Seed	14@16
Wheat, Cal. Club	1.97½@2.00
Corn Eastern Yellow, blk.	1.60@1.61¼
Corn, Egyptian White	1.55@1.57½
Barley, Feed	1.17½@1.22½
Shipping and Brewing	1.20@1.22½
Oats, White	1.55@1.60
Oats Seed	1.40@1.60
Oats, Red, Feed	1.35@1.45
Millet	3@3¾
Flax	6@6½
Rye	1.50@1.60
Sunflower	5@5½

FEED STUFF

Alfalfa Meal, car lots	12.50@13.50
Bran, tons	25.50@26.50
Feed Cornmeal, ton	39.00@40.00
Cracked Corn	39.00@40.00
Rolled Barley, ton	25.00@26.00
Rolled Oats, ton	37.00@37.50
Middlings	31.00@32.00
Shorts	27.00@28.00
Oilcake Meal	34.00@35.50
Cocoanut Oilcake Meal	23.00@24.00

Citrus Fruit Market

LOS ANGELES, Dec. 2, 1914.

California's early navels are pleasing the eastern consumer. The quality is the finest ever and the quantity abundant. Unfortunately the easterner's money is not in such great quantity as desired and that factor with the other that Florida and the islands are sending in large quantities of fruit tends to lower prices. Good fruit is commanding around $1.50 and $1.75 f. o. b., which is not disastrous to the grower by any means, but considering the quality of the fruit the grower feels entitled to more. The best feature of the shipping lies in the fact that nearly all are holding up for the "eight to one" test. This means high quality and satisfied customers. Nearly all fruit has been from Tulare County, though some sections of Southern California have sent a little very fine fruit. Butte County's shipments have been light.

Lemons are very low. Arrivals from Mediterranean points are heavy. There are afloat at this writing 65,000 boxes, and one day's sales in New York recently aggregated 27,000 boxes at $2 or less. California's output is large, 15 to 20 cars daily, and of fine quality. Good stcok is commanding around $2.00 and $2.35 f. o. b.

Shipments

Shipments of oranges from Southern California since Nov. 1, 286 cars; lemons, 291; total, 577. To same date last season: Oranges, 38; lemons, 81; total, 119. Tulare County this season: Oranges, 897; lemons, 59; total, 956. To same date last season: Oranges 1704; lemons 11; total 1715. Butte County this season: Oranges 131 cars. To same date last season, 85.

NEW YORK, Nov. 30.—Six cars Valencias, two lemons sold. Market firm on both oranges and lemons. Cloudy.

VALENCIAS—	Avge.
Old Mission, xf., Chapman	$6.05
Old Mission, fy., Chapman	4.00

PHILADELPHIA, Nov. 30.—No California fruit sold. Cool, cloudy. Twenty-six cars Floridas sold. Market steady on good stock, declining on poor condition and quality oranges. Oranges sold $1.10 to $2.55; average, $1.85. Grapefruit $1.00 to $2.35; average $1.70.

BOSTON, Nov. 30.—Three cars oranges 2 lemons sold. Cloudy, cool.

Market stronger on oranges, unchanged on lemons.

CINCINNATI, Nov. 30.—Raining. One car lemons, seven cars Florida oranges, three cars grapefruit sold. Market advancing on lemons, steady on oranges and grapefruit. Florida oranges averaged $2.05, grapefruit $1.50 to $2.40.

Comet, Or. V. Park	$3.00
Reflection	1.90

Answers in this column by Dr. Wm. Petrie, 2714 South Harvard Blvd., Los Angeles, are without charge. For immediate mail answer remit $1.00. In writing questions give full symptoms or particulars of injury of animal

Fails to Breed

I have a heifer, 17 months old, that I have bred four times and now she is in heat again. Have used different bulls. She is a promising heifer and in good condition. What can I do to get her in calf?—Subscriber, Laton.

Better skip a month or two and in the meantime if she is fat, reduce the feed. Give the following powders: Powdered gentian, four ounces; powdered nux vomica, two ounces; sulphate of iron, two ounces, and farina enough to make one pound. Divide into 16 powders and give one every night.

Hip Lameness

Have a lame heifer. Just before giving birth to her first calf, two months ago, she became lame in her hind leg. We called a veterinarian and he said there were no bones out of place. Advised blistering it and rubbing it with a liniment which he gave. She seemed better for a time, but is as bad as ever again and the flesh seems shrunken.—Subscriber, Santa Cruz.

The lameness may have been caused by a bruise over the joint or it may be tuberculosis, which sometimes locates in a joint. In any case hip lameness is hard to cure. If you do not value her too highly you had better not lose much time or expense in treating her.

Blood Poison

Two months ago a mare stuck a nail in her front foot about half way between the ankle and hoof. It seemed to only penetrate the flesh. We cleansed it as best we could, but in an hour it began to swell and pained her very much. We called a veterinarian and he opened and cleansed it. He came several times and lanced it in several places. It broke in other places until the leg, from knee to hoof, was one sore. We washed it twice a day with lysol, using a teaspoon to the pint of boiling water with a small piece of bluestone in it. It is healing very slowly and scabs over, but scabs come off, leaving it raw again. Her joints are not stiff and she limps very little. What would you advise doing for it? —Subscriber, Buena Park.

It is always best to change antiseptics occasionally because the effect of any one seems to wear out after a time. Make a solution of permanganate of potash, two drams to the gallon of water. Warm this and wet the parts once a day. As soon as it begins to dry so the scabs stick, grease it with bacon fat; that will start the hair if anything will.

Rheumatism

I have a heifer calf whose mother died within 24 hours after calving. I got the calf when it was two weeks old. It was lame in the middle or knee joint of the hind leg; said to have been strained. In a short time that joint and the elbow joint of the opposite front leg became swollen and very lame. I called a veterinarian and he pronounced it navicular disease, a form of blood poison. He prescribed tincture of eichonacea and bathing the joints with hot water. Thought it would die. The treatment seemed to increase the lameness, so stopped it. The calf is nine weeks old, lameness all gone, but joints still enlarged. Now a neighbor, who professes to have had experience with navicular disease, advises treating it by blistering, etc., or it will develop into tuberculosis. Is navicular disease a form of tuberculosis? And is it advisable to raise the calf? Or has it got some disease that will be dangerous to human beings?—Subscriber, La Canada.

Either you must have misunderstood the name of the disease or your advisers do not know what they are talking about. Navicular disease is inflammation of the navicular joint, which is only found in the horse's foot. The cow probably died of milk fever. The swollen joints of the calf were caused by rheumatism and, now that the lameness is gone, the swellings will gradually disappear. The calf will probably grow up all right and is as likely to make a good cow as any other calf. Keep the calf in a warm place at night and in the sunlight as much as possible during the day. It needs no treatment.

Scours

Have just lost two young calves, the first from a healthy cow fed on alfalfa and corn fodder. It was her sixth calf and the cow went 10 days over nine months. It commenced scouring the second day afer it came and died the fifth day. We gave it raw eggs and changed it to another cow, but nothing seemed to do it any good. The other was a heifer's first calf. We put it in the same barn, not knowing that there was any harm in it, and the next morning it began scouring and died the next day. We have never had abortion in our herd and try to be careful. The stable is new and no cattle were ever on the ground before. The calves seemed unusually hungry and ate as if almost starved. We have other calves older than these. Do you think there is danger of them taking the disease and what can be done for such cases? What is a good disinfectant to use? —Subscriber, Turlock.

The period of gestation for the cow is 280 to 285 days, so if they went over nine months, ten or a few more days, that was all right. The scours were probably due to a germ that the calves got from the dust on the cows' udders. Abortion and calf scours are caused by entirely different germs and both may or may not be present at the same time. You can probably get rid of it easily by using Zenoleum for a disinfectant. One gallon will last you a long time. Use a pint of it in four gallons of warm water to spray the stable. And when a cow comes fresh use the same strength of the solution to wash the udder before letting the calf suck. If the calf does get the scours then put a dessert spoon of the solution of Zenoleum in a little milk and drench the calf with it. Give this dose twice a day until the scours stop. Some may think this is not a very scientific preparation, but so far I have failed to find a better one.

SOME PEACHES

The William P. Stark Nurseries, of Stark City, Missouri, are issuing a peach of a catalog. The peach on the cover looks good enough to eat and the catalog touches upon peaches of practically all varieties, but especially the J. H. Hale. In addition, of course there are apples and pears, apricots and plums, and a thousand and one other items. The cover is handsome enough to frame and we doubt not the booklet will meet with a keen demand. We believe a post card to Mr. Stark, with note of the fact that the Cultivator has mentioned the catalog, will be all that is necessary to obtain a copy. The peach grower will find it filled with information.

Martinez Nursery
Established in 1884
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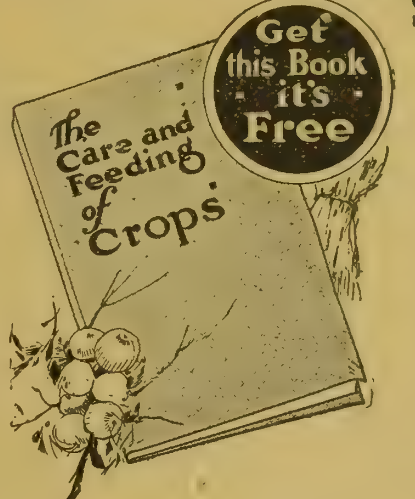
All leading varieties of fruit and ornamental trees.
GRAPES, ORANGES and LEMONS.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Bacteria in the soil.
What available soil fertility is.
Maintaining and increasing fertility.
And 100 other points not mentioned in this list.

You should have this book and study it. You can't just read it and get the facts, because the information it contains is too valuable for a casual reading.

Send for Booklet—today. It is free for the asking. You will be surprised at the wealth of information it contains for you.

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The Farmers Union, Inc., is now located at 1235-37 East Sixth St., Los Angeles, and respectfully solicit consignments of all kinds of farm produce, including eggs and poultry. We guarantee to get the highest market price and remit promptly to shippers. A trial shipment solicited. We work on a commission basis, stating to shippers the amounts we receive for produce. We will give you a square deal. Send on your produce. FARMERS' UNION, Inc., of Arroyo Grande, Cal.
C. A. Cheadle, Mgr., Los Angeles Branch, 1235-37 E. 6th St., Los Angeles

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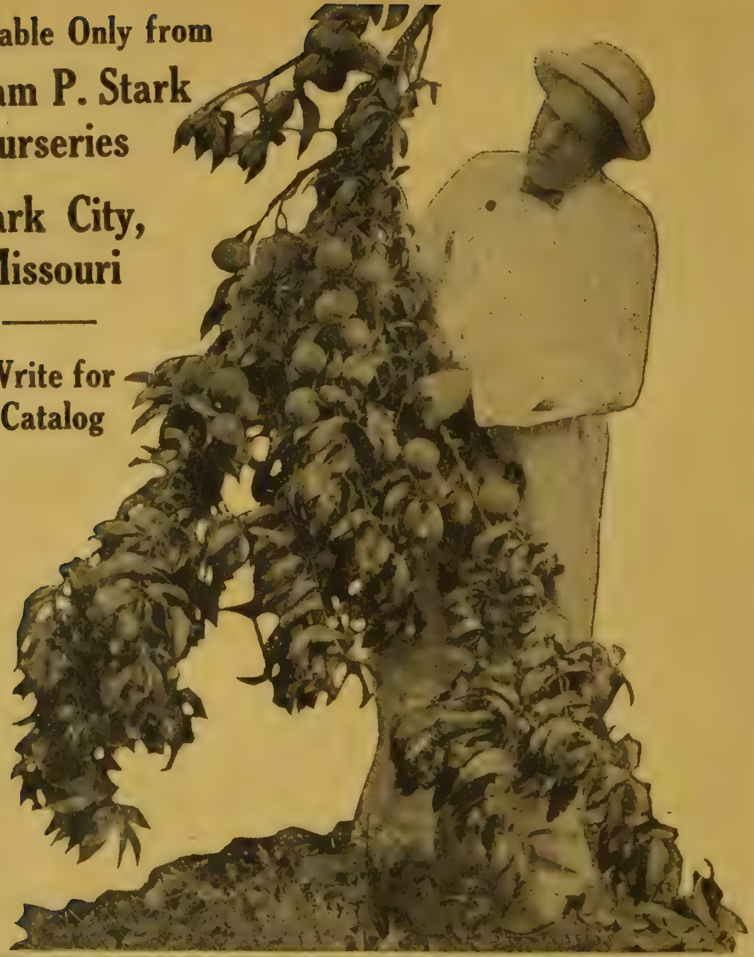

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—Stands Shipping Like Apples

Enormous Size—Round Shape—Firm, Solid Flesh
Ideal for Drying and Canning — Late Bloomer
The One Great Peach for Western Growers

All Most Wanted Qualities

In size the J. H. HALE peach is like a small cannon-ball, ⅓ to ½ larger than Elberta; weighs 12% more; color, a deep golden yellow, overlaid with carmine; skin, practically fuzzless, like an apricot; globular shape, excellent for canning; flesh firm and fine-grained—solid as a cling, yet perfect freestone; fruit ripens five days ahead of Elberta. Colors up a week to 10 days before maturing, allowing extra early picking. Owing to solidity of flesh, matured specimens can be allowed to hang on trees a week or more, extending the season at both ends.

Perhaps the greatest feature of the J. H. HALE peach is its shipping qualities. Specimens have been shipped from Connecticut as far distant as Florida, California and Texas, where they were kept 10 to 18 days after they were received. The J. H. Hale is solid enough to pack and ship in barrels. As a western grower you must realize the tremendous advantages such a peach holds for you.

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From his Conecticut orchards Mr. Hale received at the rate of $1420 per acre from his J. H. Hale peaches. From his Georgia orchards his J. H. Hales paid him 33% more profit than his Elbertas, grown side by side. Reserve your trees NOW. Supply limited.

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Caution! Beware of Fraudulent Trees!

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Send 25c and I will send you these seeds, one regular sized package of each: Acme Tomato, Ponderosa Tomato, Early Spring Cabbage, Premium Late Flat Dutch Cabbage, Davis Perfect Cucumber, Hoodoo Muskmelon, Big Boston Lettuce, French Breakfast Radish, Mixed Zinnia, Mixed Poppy.

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CALIFORNIA CULTIVATOR

Rural Californian combined with California Cultivator

An Illustrated Weekly Magazine, Devoted to the Rural Home and Ranch

LOS ANGELES December 10, 1914 SAN FRANCISCO

Some of the Buildings on Kearney Vineyard

The University of California Has a Great Property in the Kearney Vineyard Estate at Fresno. This Property Came to the University Heavily Encumbered but Through Business Management the Mortgage is Now Practically Lifted. This Property Will Some Day be a Great Educational Factor in the Work of Our State University. Article Regarding the Possible Future of This Property by Dr. Thos. Forsyth Hunt in This Issue.

The Ideal 40 Acre Farm

The Land Lies Ready for the Plow and Near Two Railroads

Wheat Standing Five Feet High.

Full Bearing Olive Grove Shows What Is Being Done Within the Tract.

Transforming the Plains Into Orchards

From the bare land, to the wheat field, to the aristocratic olive or citrus orchard; and even to avocados—such a transition is the work of pioneers with clear sight toward an old age of comfortable competence—such a transition is going on in the undulating plains north and east from Marysville. The planters of olive orchards and fruit trees there today are the horticultural leaders of tomorrow, for the soil is right, the drainage is right, the irrigation is simple, the climate is right and the class of people who undertake such a transformation is the sort that can cooperate to market right.

Here is a district of many thousand acres of deep loamy soil underlaid by water-bearing gravel in which the water table can scarcely go below 25 feet. With the Feather and Yuba Rivers within a few miles a constantly available supply of water is assured at such a depth that a pump on top of the ground supplies sure irrigation. A well now being bored shows a depth of 40 feet of sandy loam and 40 feet of continuous underlying water gravel, the water level coming to within 15 feet of the surface. Such conditions are ideal for irrigation by pumping.

Two railroads, The Western Pacific and the Southern Pacific, furnish transportation in competition with the water routes.

The land is gently rolling with just enough slope for drainage, it lies ready for the plow and the wheat crop—**no clearing to do, no brush to handle** or stump pullers to buy. Nature has left this land clear, clean, above all danger of floods, and the ideal homesites for thrifty California farmers who desire to make immediate headway under most favorable conditions. Within a radius of five miles may be found almost all kinds of fruits, grain and vegetables. Here, too, are some 40 and 50-year-old fig and apricot trees and still bearing fruit. Here, also, cucumbers are grown which reach the S. F. market the first of the season.

The central picture, taken last July, shows what the land in this district can do when planted to wheat. It grows luxuriantly five feet high and thickly stooled out. The crop from this field of 1200 acres the past season was enormous,and it had never been fertilized or irrigated. Whereever irrigation water has been applied even in most limited ways by windmills or small pumps the results are astounding.

The lower picture, showing an old olive orchard on the same tract, proves that this fruit and any others which thrive under similar conditions, are favored and encouraged by the climate.

This, the final step in the three stages which are already proven on this tract, an orchard that will be yielding more and better fruit for your grandchildren than for yourself, an orchard that yields good commercial returns with five years from planting, **is within your reach.**

A large tract of this fertile soil in a favorable climate, with plenty of available water and good drainage, and no alkali, is being sold in forty-acre farms. Orchard trees are furnished for the planting of nearly half of the farm. Grain, corn, beans and other seed are furnished for the rest of the land to provide a quick income. Wells and pumps are installed for irrigation and home use.

All kinds of vegetables and poultry thrive—the living expenses may be reduced to a minimum by having a garden, poultry yard, and perhaps a cow.

There is immense satisfaction in growing up with the country, in transforming fertile plains into grain fields, and orchards, and home, amid neighbors whose interests are the same as yours. Land values in upper California are increasing constantly but normally as new homeseekers are developing the country and there is every assurance that this land will be doubled in value within a few years.

If you are desirous of locating on one of the best 40-acre farms in the state—on new, clean land, or if you know of any friends in the East who want homes in California I want to send both of you information on California farm lands—and values—**which every homeseeker should have.** A post card will bring it.

Investigate and see this land for yourself before you buy.

THE PRICE $150.00 PER ACRE INCLUDES

A MODERN PUMPING PLANT COMPLETELY EQUIPPED AND INSTALLED. A SELECTION OF TREES AND SEED BEST SUITED TO THE LAND, NECESSARY FARM IMPLEMENTS FOR IMMEDIATE WORK.

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Formerly Deputy Commissioner of Horticulture of California, Expert, United States Department of Agriculture.

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California Cultivator

Rural Californian combined with California Cultivator

Vol. XLIII No. 24 LOS ANGELES: THURSDAY, DECEMBER 10, 1914 One Dollar Yearly

Best Methods of Lighting the Farm Home

J. B. Neff Investigates Different Methods of Lighting and Gives His Findings as to Electricity, Gasoline and Acetylene. There is No Reason Why the Farm Home Should Not Have Practically Every Convenience Available to the Home in the City

A WELL lighted house is much more cheerful than one with poor lights, and a good modern lighting system is safer as well as much more convenient than oil lamps, though the oil lamps which we know were a great improvement over the tallow candles of 60 years ago. Small independent lighting plants can now be bought and installed at such reasonable figures that almost every one can have good lights, as well as other conveniences which may also be used in connection with the lighting system, such as cooking and heating appliances with acetylene and gasoline, and electric fans, irons and vacuum cleaners with electric plants. However it must not be supposed that a small private lighting plant will furnish light as cheaply as lighting plants that are built to supply a city. Neither will it be as convenient to take care of the small plant as it will to turn on the light from the large plant when wanted.

Acetylene

Possibly more acetylene lighting plants are used than of all other kinds. This is because of the low cost and easy installation, as plants capable of furnishing 20 to 50 lights can be bought for $150.00 on board cars at Los Angeles or San Francisco. Piping an ordinary eight-room house should not cost more than $20.00, and the fixtures can be bought for $40.00, or as much more as the buyer wishes. The light will cost about two-thirds cent per hour for 16-candle power light when carbide costs five cents per pound, as at present, but that cost is likely to be reduced as soon as shipments are made by the Panama canal. The cost of cooking is rather high when compared with other fuel and is about the same as coal gas at $1.50 per 1000 feet, or from two cents to five cents per hour for each burner. Considerable is often said about the safety of acetylene gas but with proper installation there is very little danger if ordinary care is taken. The generator should be placed outside and fifty feet from the house if possible, in a small, well ventilated building which is used for no other purpose. All filling and cleaning should be done by daylight, and artificial lights such as candles and oil lamps should not be brought near the generator. There is but small danger from leaky pipes as the odor of the gas is so pungent that a leak will be detected at once. Among the safe generators is one that drops the carbide particles into the water automatically as needed, instead of dropping water on the carbide.

Gasoline

Gasoline gas lighting plants are not as common as they should be for farm house lighting when the advantages in cooking and heating are considered. The machinery of the plants is simple and long-lived and the cost not excessive. More care is necessary with the piping for gasoline gas than for acetylene as the pipes must not have traps or low places between the burners and the gas machine. There will be some condensation of the gas during cold days and gasoline would gather in these low places to the damage of the lights. Gas machine gasoline of 80 degrees to 87 degrees test must always be used and not the gasoline commonly used in automobiles, as this sometimes is as low as 56 degrees and will not make good lighting gas. Gas machine gasoline costs at present 35 cents per gallon in 50-gallon drums, but as five gallons of gasoline will make 1000 feet of gas and an incandescent mantle burner will consume only two and one-half feet per hour the cost for light is not excessive. A 16-candle mantle burner will cost about one-third of a cent per hour for light. The burners used for cooking vary from a cost of one cent per hour to three cents per hour. For heating the cost will vary according to amount of heat needed but will be from one cent to five cents per hour.

Gasoline gas machines, including all that is necessary except pipe and fixtures for the house will cost, freight paid to Los Angeles or San Francisco; for 15 light machine, approximately, $220.00; 20 light machine, $245.00; 25 light machine, $265.00. The machine should be placed in an isolated building a little distance from the dwelling. The piping will cost the same as for acetylene and the fixtures may cost according to the wishes of the purchaser.

Electricity

This is the modern light and is a luxury at a low cost when it can be had from a power company or the city lighting company, but because one is not located so as to be able to get his light "ready made" he need not be deprived of the comfort of electric lights. There are various styles of generators, but that which has the engine as an independent machine is the most convenient since the engine can be used for other purposes, such as pumping water, sawing wood and doing the family washing when not needed for running the generator. The cost of complete equipment, including generator, switchboard and storage battery, but not including engine, for twelve 40 watt tungsten lamps (32-candle power) continuously, or five 40 watt lamps seven hours from storage battery will be about $300 on board cars at either Los Angeles or San Francisco. The same equipment with storage battery sufficient to carry eight 40 watt lamps six hours will cost an additional $35. A two and one-half horse power gas engine costing $75 to $80 is amply large to furnish all the power needed. These equipments are readily installed and once in place are not liable to need expert service. They are low voltage plants and are safer than high voltage but require larger wires in the buildings than the high voltage. The cost of light from such a plant will be 15 cents to 20 cents per kilowatt hour, or one cent per hour for each 40 watt, (32 candle) tungsten lamp. Tungsten lamps of 10 watts to 40 watts are sold for 30 cents each, but lamps of suitable voltage are not kept in stock west of Chicago at present. However, a supply of a half dozen extra lamps is all that will be needed in a year, and a new supply can be had in ten days. The storage battery will last from three to five years and is not expensive to replace. Wiring an eight-room house will cost $20 to $25 and the lights and fixtures from a few dollars to any amount desired.

The Kearney Ranch

A Possible Unit in California's Educational System. A Great Property Which Will Some Day be Used to Advance Education by the University of California.

Extracts from an Address by Dean Thomas Forsyth Hunt, Some Time Ago at Fresno

IN an address before the Commercial Club of Fresno Dean Thomas Forsyth Hunt of the state agricultural college spoke of the great Kearney vineyard property which was bequeathed to the state university by the late Theo. Kearney. There are so many interesting points in Dean Hunt's address that we quote:

The first time I ever heard of the Kearney ranch, at least in its relation to any educational program, was in New York city two years ago last July. President Wheeler had been kind enough to ask me if I would come to California. How kind he was being to me I did not at that time fully appreciate. Among the many things the president had to talk about was Mr. Kearney's will and the proper use and development of the great property bequeathed to the regents of the university.

Almost, if not quite the first time I saw the president after going on duty in this state, he said: "What about Kearney ranch?" I said "Mr. President, I am new to your state, ignorant of your local conditions, and besides I have other things to do which for the moment need my full time. The Kearney ranch is now being conducted satisfactorily by the comptroller as an income bearing property. I suggest that conditions be allowed to remain as they are until I have had time to study the situation. Some day I will come to you with a program for the development of the Kearney ranch." At various times since, President Wheeler has discussed this subject with me. He has not only expressed the most profound interest and sympathy in the future development of Kearney ranch but has felt sincerely concerned, because of the necessary delay.

So far as the last two years are concerned, I accept all the criticism or blame that may be attached to the delay. The plan is to make the Kearney ranch a very important and integral part of the greatest institution in the world for research and instruction in agriculture, horticulture, forestry and allied topics. Naturally no definate steps could be taken by anyone until the man, for the moment, im-

(Continued on Page 595.)

The Cost of a Telephone Call

DID you ever think how much it costs to give you the telephone right-of-way anywhere, at all times?

Your telephone instrument, which consists of 130 different parts, is only the entrance way to your share of the vast equipment necessary in making a call.

Your line is connected with the great Bell highways, reaching every state in the union—with its poles, copper wire, cross arms and insulators in the country; its underground conduits, manholes, cable vaults and cables in the cities.

You have the use of switchboards costing upwards of $100,000,000. You enjoy the benefits of countless inventions which make possible universal telephone talk.

Your service is safeguarded by large forces of men building, testing and repairing lines. You command at all times the prompt attention of one or more operators.

How can such a costly service be provided at rates so low that all can afford it?

Only by its use upon a share-and-share-alike basis by millions of subscribers, and by the most careful economy in construction and operation. A plant so vast gives opportunity for ruinous extravagance; and judicious economy is as essential to its success as is the co-operative use of the facilities provided.

That the Bell System combines the maximum of usefulness and economy is proved by the fact that in no other land and under no other management has the telephone become such a servant of the masses.

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One, two and three years old. Variety and quality guaranteed.

"The olive is the best paying fruit grown in California"

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Destroys SCALE and INSECTS on Trees and Shrubbery

SPRAY made with JELLSOPE is a specific against scale and insects. One hundred gallons can be made at a cost of one dollar ($1.00). Non-injurious to the fruit, no poison, strictly vegetable, and acts as a fertilizer. Is a general all-purpose cleansing soap.

4c per pound in bbl. lots, F. O. B. Los Angeles.

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CITRUS HEIGHTS NURSERY

SACRAMENTO, CAL.

We are booking orders for Citrus and Deciduous Trees of all kinds. Guaranteed true to name. Write us for prices.

Citrus and Tropical Fruits

IMPROVEMENT BY BUD SELECTION

(Concluded from Last Week.)

THE practical orange performance record method used by the National Orange Company of Riverside in securing individual tree records in their extensive orchards is submitted for the consideration of citrus growers. This method includes the number of full boxes, and the weight of part boxes of oranges borne by each tree, and any notes as to quality of fruit that may be advisable.

In carrying out this method the ordinary system of picking must be reorganized to meet the conditions. The picking boxes are distributed to individual trees, instead of in box rows as is usually the case.

Each picker picks an entire tree instead of only the top or bottom sections. One man in each picking gang arranges the boxes in position at the base of the trees, brushes out all dirt from the boxes, and levels off the fruit in the filled boxes so that all boxes contain about the same amount of oranges. This man also carries a small handspring balance, with two chains attached which hook into either end of the picking box. The part boxes of fruit are weighed with this balance, and the average box tare (11 pounds) subtracted from the total weight, thus giving the weight of fruit in the partly filled boxes. If there appears any striking off-type fruit, such as Australians, yellow navels, golden nuggets, ribbed, corrugated, sectional, pear-shaped, rough or others, a note of this fact is made under the heading of quality along with the other tree data. Also any information of value, such as the presence of scale, gopher injury, dead wood, on such trees is noted in connection with the individual tree record.

These forms are arranged in books four and one-half inches wide by nine inches long, a convenient size for carrying in the pocket. Each form provides for records of 80 trees in a row. This number, in other orchards might be modified to meet orchard conditions, if the number of trees in each row is less or greater than 80.

In addition to the valuable data thus secured by the use of this method, it has been found by experience that the rate of picking is increased and the care in handling the fruit is improved. In other words, individual tree picking promotes the efficiency of the individual picker and increases the care in handling, from the fact that in this system each picker's work is open to continual inspection ond comparison. It is the most effective means yet devised for putting into practice the principles of efficiency and careful handling that underlie successful orange picking.

The annual data is collected in forms providing for several years' records. The number of trees in each sheet can be arranged to suit individual conditions.

Drone Trees

There is a marked variation in the amount and quality of fruits borne by individual trees of the same type. This variation must be clearly distinguished from type variations. For instance, in the standard type of the Washington navel orange we have found individual trees bearing consistently large crops of high grade fruit of the best commercial sizes, while other trees bear low yields of inferior quality. These low yielding trees have been called drones from the fact that they require as much attention, expense and care for maintenance as the profitable trees, without conmensurate returns.

An inspection of the average performance records (for the seasons 1911, 1912, 1913 and 1914) from ten best producing and ten lowest producing standard Washington navel trees, located in one of the best navel orange groves in California shows that the best trees have produced an average of 25.2 per cent more of the most valuable sizes, 200's to 80's inclusive, than the poorest trees of the standard type. The best trees have produced an average of 12.3 per cent more of first or orchard grade fruit than the poorest trees. We have found that by rebudding we have been able to replace the poor indivdiuals, with an hereditary tendency to produce few and poor fruits, with tops that produce the larger yield of better commercial grades and sizes of fruits.

The best produced an average of 663 oranges or 4.04 packed boxes, while the poorest produced an average of 182 or .95 packed box of oranges per tree, or a difference of 481 fruits or 3.09 boxes per tree. Figuring this difference to the acre basis at the rate of 80 trees per acre, the actual rate of planting in this grove, it amounts to 247.2 boxes per acre. The actual value of this difference is at the rate of $417.77 per acre f. o. b. packing house. Can we afford to ignore these facts? The best trees produce at the rate of $546.21 and the poorest $128.44 per acre, f. o. b. packing house.

Individual Tree Knowledge

The importance of individual tree knowledge cannot be overestimated. That it should have been largely overlooked in the past is all the more reason for attention to this phase of citrus culture now. We have had a large number of visitors who desired to see for themselves the nature of our work along this line, and we are always glad to show our methods, so far as our time permits. We have had many comments from notable authorities giving their opinions as to the importance of this individual tree investigation, amongst which the following from Professor P. G. Holden, a man of international fame who has been of great service in the advancement of agricultural knowledge and practice, particularly in the improvement of corn production, is typical.

"I know that you are on the right side with the improving of citrus fruits. There has been a common impression among not only the common people but among scientists who should have known better, that a graft was simply a graft, and that there was no opportunity for improving by selecting some prolific branches or trees. In many respects, I believe that the opportunity for advancement and improvement are much greater with the budding and grafting method than with seed, although I am satisfied that the same general principles hold true to a much greater extent than has generally been supposed."

The ideal which we have in mind is the bringing up of the individual tree production to that of the best trees in the grove. We believe that this ideal is possible of realization and that individual tree knowledge will be the means through which this achievement can be accomplished.

PRUNING THE OLIVE

Our Australian friends are advancing rapidly in the production of orchard fruits, and very much along the same line as is California. We note the latest publication, Olive Culture, by the department of agriculture of New South Wales, from which we quote from the chapter touching upon pruning.

"This important branch of work has been very much neglected in many districts where olives have been planted, as the growers are of opinion that this tree does not require pruning. If the olive receives regular annual pruning, either light or otherwise, according to the growth which the tree has made, it will be found that the trees will crop more regularly than where they are left to their own sweet will, when they usually crop every other year.

"The trees should be pruned every year, but it will be found that some varieties require the knife more than others. This work is best done as soon as the crop is disposed of, or not later than the first of August.

(It must be remembered that this was written for orchardists in the Antipodes where the month of August corresponds to our month of February.)

"The object in pruning should be to keep the tree just so open that it can develop fruiting wood all through the tree, as well as to keep it from growing too high, as the lower the tree is the more easily the fruit is picked. Therefore, from the time the tree has attained the height of four or five feet, the pruning should commence with these objects in view, viz., to keep it as low as possible without too many main branches, and with the fruiting wood distributed evenly through the tree. The olive bears its fruit on wood of the previous year's growth; the problem, therefore, for the pruner is to regulate the number and kind of branches on the tree so that only a sufficient number of wood branches are left to shape the tree, and to subsequently furnish a place for fruit branches. It is found that the vertical branches are practically sterile, while the horizontal branches bear the fruit.

"No hard and fast rule can be laid down for each tree or kind, as one tree may require to be severely cut, while another may only require a little pinching back. If the tree is too thick in the center, no fruit will set inside—in fact, no fruit will set where the sun and light (which are the principal agents of fructification) cannot penetrate freely.

"I would recommend the vase or goblet shape for those who are growing olives, as by this system scale diseases are more easily kept in check and the fruit ripens more evenly and earlier. The lower and drooping branches may be allowed to grow downward until they almost touch the ground, as these shelter the friendly ladybirds and produce good fruit which is easily harvested.

"The Nevadillo Blanco is a sturdy low-set tree with a large fruit bearing capacity—within reasonable distance from the ground.

WILD CITRUS FRUITS OF MADAGASCAR

By Consul James G. Carter, Tamatave

Citrus fruits grow in a wild state in Madagascar, though in the center and on the east coast of the island oranges and mandarins are grown in small quantities from planted trees. Oranges and lemons ("voasary" in alagasy), of no fixed varieties, are most common on the east coast, and are found either near the shore in sandy soil or more in the interior in compact soil, more or less flinty or rocky, and, as a rule, poor and arid.

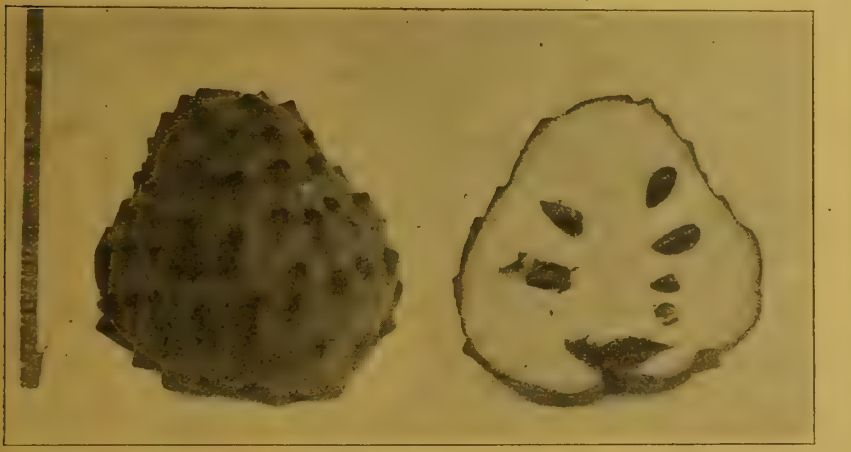
The trees do not grow in the shade of forests, but are scattered among bushes, usually next to guava and "voavontaka" (Strychnos ipenosa) trees. The quality of the fruit, excepting the lemons, is generally poor. The better varieties, however, have been introduced.

There is an orange tree (Citrus aurantium) on the west coast, which grows 8 to 10 meters (26¼ to 32 4-5 feet) high. The fruit is ordinary, contains little juice, and is attacked by a small larva which eats the pulp. The tree is also attacked by a larva or moth which devours the leaves completely.

A small lemon ("voasary makirana" in Malagasy), about the size of a hen's egg, also grows on the northwest coast. The tree of this fruit is about 4 to 5 meters (13 to 16 2-5 feet) high.

On the east coast there are two local varieties of mandarins (Citrus aurantium, var. nobilis), and one imported from Zanzibar. Grapefruit or shaddock (Citrus decumana) of an imported variety is found on the east coast.

Semitropical fruits, such as mangoes, figs in small quantities, papayas, pomegranates, etc., also grow in Madagascar, but not in a cultivated state, except at the experiment stations at Tamatave and Nanisana, near Tananarive.



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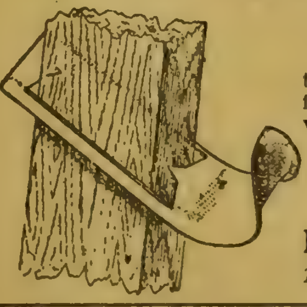

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Deciduous Fruits

SOME PEAR IDEAS

Written for the California Cultivator
By Sacramento Valley Contributor

PEAR blight has caused a loss of many thousands of dollars to the fruit growers of America, yet both practical pear men and scientists agree that with the knowledge we now have of the disease it is quite possible to control it.

Pear blight is a bacterial disease of the sap of the tree. There is no remedy yet known for the disease, that is, no medicinal or other means of attacking the germ in the diseased tissues and killing the infection so that the tree may grow new tissue in place of that which is diseased.

Nor does there seem to be any way of protecting trees from the infection except to see that all the blight in all of the pear and apple trees in the neighborhood is cut out, so that bees or flies or other insects have access to no diseased tissue from which to bring infection to the blossoms or other parts of clean trees.

When a tree is infected the disease germs pass up and down in the inner tissue of the bark, destroying the tissue, literally blighting it. It makes most rapid progress during the spring, warm moist days when sap is flowing freely being particularly favorable to its spread. Twigs and limbs that are affected have the appearance of having been burned by fire. They are dried and the leaves are black and dead—hence the name "fire blight" sometimes applied.

The one means of combating the disease is by cutting off or out the affected tissue, disinfecting the tools used after each cut made. This seems very simple and it is absolutely effective as has been demonstrated. All that is required is to first know the blight—which is easy—then it is a matter of attention to detail, scrupulous care and keeping everlastingly at it.

This lack of attention to the simple detail of disinfecting the tools after making each cut often continues the spread of the disease and by reinfecting each fresh cut defeats the purpose for which it is done. The affected twig or limb must be cut back to healthy tissue and that which is diseased destroyed. If the disease is in the trunk or roots all diseased tissue must be chiseled away. And every time a cut is made the shears or chisel or knife must go into the disinfectant and the cut made should be disinfected, but the disinfection of the cut —which is healthy tissue— is less important than to thoroughly clean the tools each time. Disinfection is accomplished by use of kerosene or a strong solution of bichloride of mercury. A pail containing the liquid is carried by the operator, the tools dipped in the pail after each cut and kept in it while going from tree to tree.

Owners of extensive pear orchards have found it practically impossible to hire men who will follow absolutely this rule about disinfecting tools and this is one of the causes of the great loss from the disease.

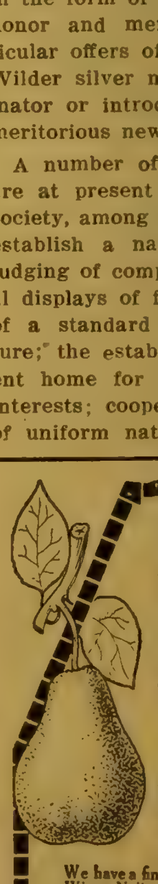
Another important consideration in connection with blight is to keep the small twigs and shoots pretty well trimmed off the main limbs and trunk of the tree. Infection here is more serious than in the tip ends of the branches because every square inch of surface chiseled off stops some of the circulation of the tree, and if the infection circles the trunk the tree is quickly killed.

Another thing to avoid as much as possible is cutting the trees when they are growing vigorously. Severe pruning at this time makes lots of young new growth and this is especially liable to infection. Heavy cutting of infected tissue during the free run of sap and during the early summer can be avoided to a great extent by carefully cutting out all infection during the winter while the trees are dormant.

AMERICAN POMOLOGICAL

The American Pomological Society is a voluntary incorporated organization of men and women interested in the development of a continental pomology. To this end the society holds biennial meetings for the consideration of papers and reports upon the leading live topics of the industry; for the discussion of the merits of new or little known varieties of fruits; for deliberations as to the values of varieties for specific locations and uses; for debate upon proposed or pending legislation covering questions bearing upon national or continental pomology; for the determination of problems in nomenclature—the correct naming of varieties of cultivated fruits. In its efforts to accomplish these and other ends it uses as a means of stimulus the income from certain bequests made years ago by its first president, Marshall P. Wilder, in the form of medals and awards of honor and merit. Among the particular offers of this character is the Wilder silver medal offered the originator or introducer of a specifically meritorious new fruit.

A number of lines of active work are at present being pushed by the society, among which are the effort to establish a national score card for judging of competitive and educational displays of fruit; the inauguration of a standard system of nomenclature; the establishment of a permanent home for American pomological interests; cooperative effort in behalf of uniform national pomological and



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horticultural legislation; cooperation in international effort to the end that system, order, simplicity and integrity prevail in the world's work in pomology. In truth, the American Pomological Society stands for better fruit, better fruit growing and a better fruit grower for the American continent.

The society's publications consisting of the bulletin, regular and special reports, are mailed to all members and not to others except on vote of the organization. Today the reports of this society are the most important and valuable contribution to American pomology, for they embody a complete history of the essentials of its progress for the past 60 years. A full set of publications for a period of two years is available to any person for two dollars; a set of all past reports yet in print, together with all others during life, are likewise available to any person paying $25. Single copies of any available past report, two dollars to others than members.

The annual meeting will be held in Berkeley September 1-3, 1915.

A NEW KIND OF FIG

Written for the California Cultivator
By Dr. J. A. Munk

In my botanical garden near Compton I have been experimenting for several years with eastern trees, shrubs and plants, to find out how the change to California soil and climate affects them. I am using seven acres of land for this purpose and can later on extend my ground as occasion may require.

In 1906 I began planting a grove of deciduous shade trees that I started mostly myself from seeds and cuttings which have done remarkably well, some of these trees having grown in that time into large forest trees eighteen inches thick and seventy-five feet high, with foliage so dense as to make an unbroken shade.

I also planted at the same time a small orchard of deciduous fruit trees and among the trees are several kinds of figs. Four years ago I planted together some cuttings of the black African and white Kadota figs to start more new trees for replanting. When these cuttings began to produce fruit I noticed that the figs on one of the little trees were different from the others. This discovery aroused my curiosity and caused me to take the tree under observation.

The fruit is neither of the black nor white varieties of figs, but is seemingly a combination of the two, being mostly white, but showing pale, pink spots and stripes on the skin. The shape of the fruit is also different, being decidedly bell-shaped and of good size and flavor. It is thin-skinned and the meat is of a delicate lemon-yellow, instead of being either red or brown, as in the case of the two varieties before mentioned. It is very sweet and when fully ripe tastes like nectar.

The shape of the tree is low and bushy, on the dwarf order, with branches starting from near the ground. The tree now, at four years of age, is ten feet high and 12 feet wide in the middle.

The first fig crop of the season is insignificant or entirely absent, as the yield of fruit is small; but the second, or real crop, is always sure and large in all varieties. My new fig, however, has the advantage of a longer season, lasting from the first of August until the first of December. It thus produces its luscious fruit during four full months as against two or three months of any other kind.

The cross evidently came from planting together the two varieties of cuttings, as before described; but how they managed to originate a new variety of fig is a mystery. Its history seems to be similar to the introduction of the Carolina poplar, as its origin is equally mysterious and unexplainable, that resulted in the crossing of our native cottonwood with the black poplar of Europe.

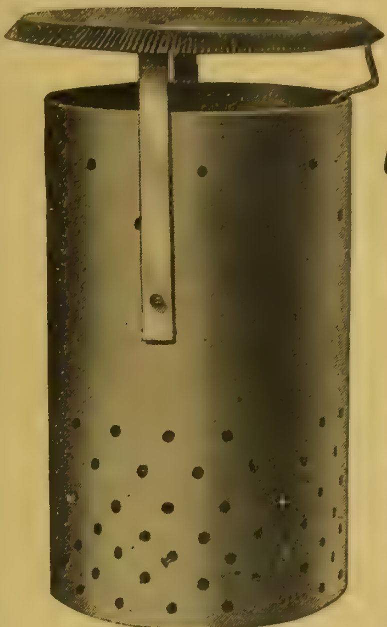
NUT PLANTING

Mr. Elmore Chase of Fairoaks, Sacramento County, writes:

"This section of California bids fair to be one of the nut growing portions of the state. Almonds have long been one of the standard commercial crops, and under the protection of the Almond Growers' Exchange is now one of the most profitable. Preparations for growing on a larger scale the English walnut are now being made since the new French varieties have shown such good producing qualities of superior nuts and are nearly if not quite immune to blight. The Mayette (Kerr), Franquette, Parisienne, and the Meylan are claimed have less than one nut blighted out of 2000. It seems that the Franquette is a promising nut, and some of the strains are especially excellent.

"But the pecan seems to take the lead in interest among nut growers. There are several trees growing in this place. Mr. Rixford of the bureau of plant industry has arranged to have introduced here 50 pistachio trees. The selling price at retail of this nut in Sacramento is five cents an ounce. Mr. Rixford has great faith in the success of this species of the nut family.

It is easy in the world to live after the world's opinion. It is easy in solitude to live after our own. But the great man is he who in the midst of the crowd keeps with perfect sweetness the independence of solitude.—Emerson.



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General Agriculture

HOW TO PRODUCE A PAYING SUGAR BEET CROP

Written for California Cultivator
By Percy L. Edwards

HAVING discussed at some length in a former paper the selection and preparation of the land best suited to produce a paying crop of beets, we now come to the care necessary in caring for the "stand." If the advice has been followed, the young plants may be assumed to be well bunched in the rows. Looking over the field after ten days from planting the seed, the rows should be well defined and easily traceable over a 20-acre field. It may happen however that a recent heavy rain, followed by hot weather, has caused a crust to form and thus prevented much of the seed from coming to light. This condition may be easily ascertained by breaking the soil where no plants are seen. The small shoots will show a bent-over appearance from the pressure. The plants are so delicate at germination that they cannot penetrate a hard crust. A patchy condition of the field is very often due to this. This condition should be immediately remedied by running a light harrow over the field crosswise of the rows in order to break the crust and let the sprouting beets through. Do not fear that you will injure your field in doing this; you will better it.

THOROUGH CULTIVATION WHEN THE CROP IS YOUNG PREVENTS CHOKING BY WEEDS, SAVES MOISTURE, INTRODUCES AIR TO THE SOIL, MAKES MONEY FOR THE FARMER

—Courtesy Planet, Jr.

At the formation of the second leaf on the young plants begin running your cultivator, one horse or two horse, down through the rows with weeding knives attached so as to cut the ground very shallow but as near the growing beets as possible and not cut them. This first cultivating is more for the purpose of killing the weeds before they get started than for any other purpose. It is important that the grower of sugar beets keep the weeds from getting a start, and he must be dilligent in doing so. The writer has known many promising fields of beets made a loss to the owner through neglect of this weeding process early enough. It is well to remember that you cannot grow a profitable field of beets and a crop of weeds at the same time. This is a good reason why it is better to plant your beet seed in soil that has been cleaned of weeds the year before.

How often the weeding clutivator is to be used will depend upon the particular conditions of the field. Once a week is not too often for some fields, but may be unnecessary for others. Let the field conditions govern you, but be sure to keep the weeds from getting a start and smothering your beets. As soon as thinning and blocking is completed and you have killed the weeds between the rows, your field will be comparatively free of weeds. Then you will be able, through ordinary care, to keep the upper hand of the weeds and not till then.

When the young plant gets its fourth leaf the process of blocking and thinning begins. This blocking and thinning is now done by a crew of men using small, short-handled hoes, working along the rows, removing all but a single plant in a place, spacing about eight inches between plants and thoroughly cleaning the rows of all other beet plants and weeds. In California Japanese and Mexican laborers usually do this work. It involves crawling along the ground on the knees and is a task that the white laborer does not take to. In this thinning operation care must be taken to thin the beets down to a single plant by uprooting all other plants, however near to the plant left they may grow. Otherwise several plants may later appear where only one should be. Only one beet root can mature in a place. Thinners will generally cover from a half to three-quarters of an acre a day. Occasionally a worker is so quick and steady that he will do more, but not usually. The grower should keep a close watch on this operation to see that it is properly done. Some fields have been so badly thinned that they had to be gone over again.

With the thinning out of the way cultivation should be resumed and kept going until the beets are laid by at the end of the growing season. This cultivation should be light at first so as not to uproot the plants or cover them over. The spiketooth will be found best for all purposes after the weeders are laid aside. For ground that hardens, the teeth should be kept sharp with a slight up curve at the lower end. But the cultivator must be set so that dirt is not piled on the beet plants. Deep cultivating is not advisable in the early growth of the plants but should be deeper as the plants grow. While no fixed rule can be laid down for the number of cultivations that a field shall receive, because of soil and weather conditions varying so much, it is a good rule to follow, to cultivate once in ten days through the season. Cultivate after each rain, and in case of extended drouth the field should be cultivated frequently to conserve moisture. It should be remembered that cultivation serves the purpose of opening the soil to the chemical action of the air, aiding in the retention of moisture and ridding the soil of weeds that consume the beet plant food. Air is vitally necessary to plant growth, particularly to such plants as sugar beets where the root is the important part of the plant. Keeping the ground about the growing roots broken permits the air to penetrate and vitalize the soil about the roots. Then the rain penetrates this broken soil more readily. The dirt mulch made by cultivation tends to hold the moisture below.

The two-row, one-horse cultivator is the better cultivator to use in the beet field. This is a walking cultivator and for that reason it is apt to be discarded for the two-horse, four-row tool equipped for riding. The walking tool enables the driver to see what he is doing all the time. With the work of the cultivator before him the operator can avoid cutting gaps in the rows of beets, which is frequently done in the operation of the riding implement. The importance of preserving the "stand" as the thinners leave it, may be understood from a few figures:

Each yard square of soil is capable of bearing 9 beets. This gives 3 beets in 3 rows; the beets 9 inches apart; the rows 18 inches apart. There are 4840 square yards in an acre. Now, if the stand is perfect 9 x 4840=43,560 beets. If the beets weigh but a pound each, which is very low, the tonnage would be nearly 22 per acre. A beet should weigh better than two pounds. Applying this figure and the result is shown to be above 43 tons. Now notice the effect on the crop yield if by careless cultivating, four of these plants are destroyed; 5 x 4840=24,200 beets, or 12 tons per acre for one pound beets and 24 tons, two pound beets.

In connection with these figures it is fair to state that the writer gives these figures for the purpose of illustrating how important it is to get the stand as nearly full on the ground as possible. The writer never saw a perfect stand and does not know of anyone who has. Twenty-eight tons per acre is the best the writer has seen with his own eyes and he has been assured that 33 tons per acre have been produced. Either of these figures will serve as a goal for every sugar beet grower in California to strive after. There is no part of this country and perhaps no other country where the chances are better than in this state.

There is considerable difference of opinion regarding the depth of cultivating, the distance the ground should be broken from the roots and the sort of tools to be used. These are details that depend so much upon soil conditions, size of plants and the object sought in cultivating that no rule can be laid down for this work other than in a general sense. If the ground has a tendency to harden, disks should be followed by deer tongues or shovels. In using the disks they should be adjusted so as to throw the dirt from the beet plants instead of toward them.. Then adjust the deer tongues to follow so as to make a mulch and fill in behind the disks. This gives a good stirred-up condition to the middle of the row. As the beets grow larger the object must be to loosen the soil deeper. Sugar beets feed through countless minute, fibrous roots while in the early growing stage and care must be taken not to run the cultivator too near so as to injure them.

Keep the cultivator going just as long as it is possible to get between the rows, only stopping when the growth obstructs further work.

FARMERS' SEED GROWERS CO-OPERATIVE ASSOCIATION

The following account of the activities of seed farmers in Wisconsin is found in an April issue of the Deutsche Landwirtschaftliche Presse, published at Berlin:

The seed growers' association known under the name of the "Wisconsin Experiment Association" was founded on a cooperative basis in the year 1901 by 187 members. In order to make sure that the members recognized the full importance of the objects in view, it was decided that at first only the farmers who had attended a state school of agriculture would be admitted as members.

The expenses of the association were defrayed by the members only during the first two years. Since 1903 the state has granted a subsidy, which last year amounted to about $5000.

The activity of the association has been considerable from the very beginning. After the secretary of the associaton had decided upon the most suitable varieties of seed at the farm of the experiment association, every member received enough seed for two acres with which to carry out comparative trials. Altogether the experiments are conducted on a large scale; thus for five years 1020 members experimented with barley and 1500 with maize. Already, from the beginning, the members in the various counties were invited to form centers for the supply of selected seeds in their vicinity. In this way 1500 centers for maize were established by the side of those for barley, oats and rye, and their action was such that the neighboring farms soon adopted the new varieties and thus the desired uniformity in the varieties cultivated was attained, which contributed largely to the present reputation of the association for its maize and other cereals.

The association has also rendered valuable service in the control of plant diseases.

Owing to the considerable growth of the association, a certain decentralization has become necessary. It has been met by the foundation of local sections for the several counties, which bear the title of "County Orders of the Experiment Associaton." They are under the supervision of the central management and have a secretary who is appointed and paid by the state association. When in a county more than 50 farmers grow seeds according to the instructions of the association, such county orders are founded. At present there are 38 of them.

For the sale of the selected seed special packages bearing the trademark of the association are used. But previously, in the course of the year, the secretary of the county order must have inspected the methods of selection and other treatment of the seed, and the central association must have made a final examination of the seed. A special list is kept of the names of the producers of "inspected" seeds.

For the further promotion of the sale of seeds, the state association has already erected some seed granaries furnished with the necessary appliances.

ADVANTAGE OF THE AUTO

Touching upon the automobile and its advantages, or rather its necessity, to the farmer we have the following from Mr. A. P. Griffith, an extensive grower of citrus fruits with orchards near Azusa:

"The automobile is a necessity to a farmer when in the prosecution of his business of farming the time to be saved in the distance traveled warrants the idleness of his team and expenditure of the cost and upkeep of the automobile. On the contrary, when there is work for the team which would be interfered with by the trip which the farmer must needs take in the prosecution of his farming business, or when he has added other business or duties which would consume his time or the time of his teams to an extent that would interfere with economic adminstration of his farming business, then the auto becomes a different factor and an economic tool.

"When his income will afford a moderate expense for an auto, then such becomes a necessity in providing for the comfort and happiness of his family, not quite reaching the dignity of a "luxury." Beyond this point the question of economy becomes a question as to whether or not he can afford a luxury which causes him to leave his business on pleasure tours.

"I am not saying one word about the farmers' right to recreation and rest, but only as to the economy of the ownership of an auto. The automobile like the telephone and other items in "the cost of high living," has come to be a necessity, though not in the economy of the farmer whose team can furnish his transportation without interfering with his ranch work."

NEW KINDS OF SHORT COURSES

Missouri announces that it has organized a new style of farmers' institutes. It extends from its university an invitation for farmers to organize local institutes covering a period of one week. This organization or institute club must consist of 50 farmers, who each pay a tuition fee of one dollar. When the local organization is effected they notify the director of the short-course extension department what subjects or branches they desire instruction on, and the time of holding the institute or term of school is arranged for. From two to four lectures are given each day. Tickets of admission are issued to each person paying one dollar, the required membership fee, and no one but members is admitted.

It is claimed for this system of organization that a much greater benefit is derived by those participating than when the audience is made up of idle listeners who are not specially interested in the work. There has been no trouble so far in getting the required 50 members, and the work is one of intense interest to both pupil and teacher.—20th Century Farmer.

COMPASSION

Hobo—I've eaten nothing but snowballs for three days.

Lady—You poor man! What would you have done had it been summer time?

STEAMSHIPS THROUGH CANAL

The following is a list of the 46 vessels now commissioned in the coast trade:

American-Hawaiian Steamship Company—26 vessels—To San Diego, Los Angeles harbor, San Francisco, Portland, Seattle and Tacoma; sailing every five days; time in transit to San Francisco, 23 days.

Lukenbach Steamship Company—seven vessels—To Los Angeles harbor and San Francisco; cargo for North Pacific coast ports transshipped at San Francisco; sailing every 10 days; time in transit to San Francisco, 27 days.

Atlantic & Pacific Steamship Company, W. R. Grace & Co., agents—four vessels—To Los Angeles harbor, San Francisco, Portland and Puget Sound; sailing every 14 to 18 days; time in transit to San Francisco, 20 days.

Arrow Line, A. H. Bull Steamship Company, agents—three vessels—To Los Angeles harbor and San Francisco; sailing every 20 days; time in transit to San Francisco, 24 days.

Sudden & Christianson Steamship Company, D. B. Dearborn & Co., agents—six vessels—To San Pedro, San Francisco and Seattle; sailing every 20 days; time in transit to San Francisco, 23 to 25 days.

Tolls amounting to $735,182 were collected from vessels using the Panama canal in the three months ending November 1. Before the canal was open to merchant ships, $11,610 had been collected on barge traffic, making the gross income to November 1 total $746,792. In October 45 vessels passed through southbound and 40 northbound, paying $377,000.

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NITROGEN IN LIQUID MANURE

THE liquid manure used at the experiment station of the Illinois University is made in the following manner. About 35 pounds of fresh cow manure is put in a 50-gallon barrel. This is filled with water and allowed to stand for a day with occasional stirring, and then the liquid, holding the soluble portion of the manure and carrying a part of the solids in suspension, is drawn off for use. This is called by us the "first extract." The barrel is again filled with water and the manure (mostly floating on the surface), is allowed to ferment for a week or fortnight. The "second extract" is drawn off and used, after which the residue is removed from the barrel and the process repeated. The plant food content of these two extracts, their relation to equivalent amounts of chemicals which might be substituted for the manure, and the relation between liquid manure prepared in this manner and that prepared by boiling or steaming manure, are subjects that require investigation. I wish in this article to discuss these subjects with respect to nitrogen, giving the results of some analyses and other experimental work and pointing out their significance.

Values of the Two Extracts.

The manure used for their preparation was cow manure dropped the night previous. It contained the average amount of moisture, about 75 per cent, and 8.9 pounds of nitrogen per ton of moist manure. This means, of course, 36 pounds of nitrogen per ton of dry matter in the manure. A portion of each extract was evaporated to dryness and weighed in order to determine the amount of solid matter removed by each. The following figures were obtained for the total amount of solid matter present in 40 gallons of extract (about what a 50-gallon barrel will hold outside of the manure): first extract, 1.61 pounds; second extract, .844 pounds. The first extract contained very nearly twice the amount of solid material contained in the second. The fertilizing value of liquid manure is to be measured by the amount of nitrogen (also phosphorus and potassium) it contains and an analysis of each extract showed the total amount of nitrogen in each to be as follows: first extract, 28 grs. or 1 oz.; second extract, 13.6 grs. or ½ oz. In other words, the first extract was twice as strong a fertilizer (so far as nitrogen goes) as the second. The value of the second extract, about one-half that of the first, will give an approximate idea of the importance of using fresh manure whenever possible and when this is not possible, of preventing leaching to as great an extent as possible. A. D. Hall, of the Rothamsted experiment station, England, gives the following relative values for nitrogen in the drainings from fresh and old manure, which support this advice:

Per cent of nitrogen in liquid manure—fresh, .044; old, .026.

Chemical Liquid Manures.

In order to obtain the same strength of nitrogen in a chemical liquid manure, the weight given below of any one of the chemical fertilizers named should be added to 50 gallons of water.

Name of Chemical	Strong Extract	Weak Extract
Ammonium nitrate	4 oz.	2 oz.
Ammonium sulphate	6 oz.	3 oz.
Nitrate of potash	9 oz.	4.5 oz.
Nitrate of soda	8 oz.	4 oz.

The very small amounts named here serve to show the dilution of liquid manure as ordinarily made. Stronger solutions of chemicals than these can be used with safety, the amount of sulphate of ammonia or nitrate of soda usually recommended being one pound to 50 gallons of water.

After Effects on Soil.

Of the chemical liquid manures named above, ammonia sulphate gives an acid reaction to the soil, and its use should be accompanied by applications of lime from time to time to prevent the soil becoming acid. Nitrate of potash and of soda, on the other hand, have a tendency to cause alkalinity in the soil. Ammonium carbonate, which is the main constituent of liquid manure made from dung, has the same effect. The use of any of these should be restricted as much as possible on heavy clay soils, since they cause the particles to run together and form a plastic mass, which becomes hard and impervious to water and air when it once dries. Limestone is said to relieve this condition also. The mention above of the fact that carbonate of ammonia is the main constituent of liquid manure leads me to discuss its origin and peculiarities of behavior and point out their meaning to the user of liquid manure. The majority of the soluble part of manure, the urine, is a compound composed of nitrogen, carbon and hydrogen. Urea itself is so easily transformed by bacteria into carbonate of ammonia that in the drainings of a manure pile, urea can rarely be detected. Now, carbonate of ammonia is composed of carbon dioxide, water and ammonia, and decomposes at ordinary temperatures, the more quickly the higher the temperature, into ammonia and carbon dioxide, which are both gases and are lost into the air, and water. This is the reason that a manure pile usually smells of ammonia. A familiar example of carbonate of ammonia is the ordinary smelling salts, which is carbonate of ammonia to which some perfume has been added. The pungency of the salts is due to ammonia, although its odor is covered by that of the perfume.

Now, carbonate of ammonia is neutral in reaction and if a test is made with litmus paper liquid manure will be found to be neither acidic nor alkaline. But when heated the carbonate of ammonia breaks up into ammonia and carbon dioxide, which are lost, and water. The explanation of this reaction shows why ammonia is lost when manure is boiled, and makes me question, as I have heard practical florists do, whether the ammonia lost by boiling or steaming manure is more than the additional nitrogen caused to go into solution by this method; and so does it pay to boil manure to secure liquid manure? The question raised here cannot be answered accurately because the amount lost depends on the length of time it is heated and on the composition of the manure used, which is variable. In the simple experiment described below, however, is shown a method for preventing its loss. Into each of three test tubes (one inch wide by six inches long, say,) put a little liquid

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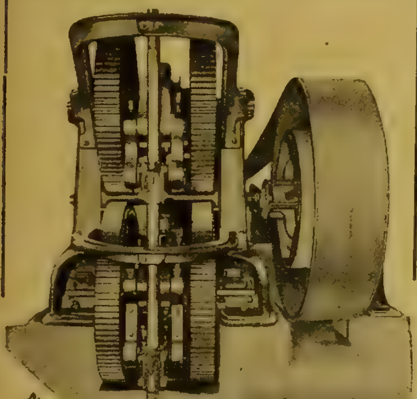

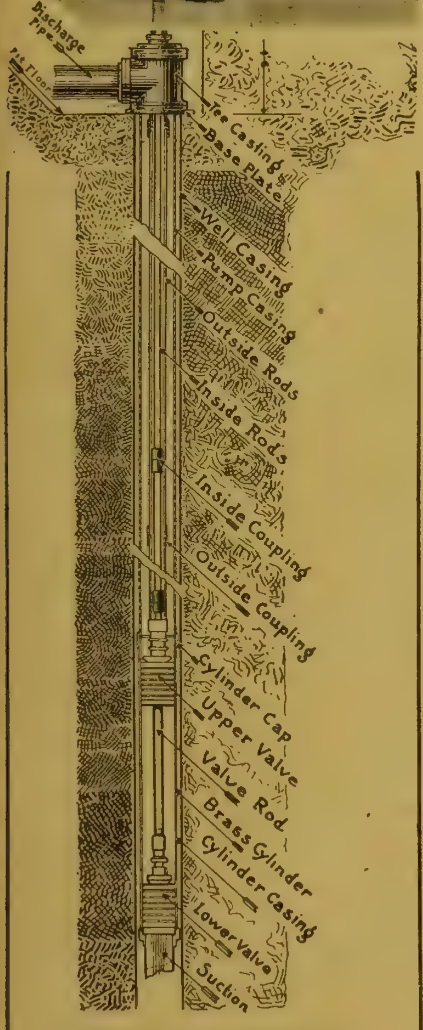

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manure (about one inch). To the first add a few pieces of carbonate of soda or potash, or some lye or any alkali. To the second add nothing and to the third add a few pieces of acid phosphate. Now, moisten three strips of red litmus paper in water and lay them across the top of the tubes, after these are placed, heat each of the tubes to boiling and boil for a minute or so. Then stand to one side and examine for five minutes. The following results will be obtained: The litmus paper on (1) will be a deep blue, (2) will be rather less blue, but noticeably so, while (3) will remain red.

The explanation is simple but very significent. During heating (2) lost its ammonia by the breaking up of the carbonate of ammonia as described above, and the ammonia, coming off into the air, caused the red litmus paper to turn from red to blue. The alkali in (1) assisted in this and other similar decomposition and hence the paper is deeper blue in this case. In (3) the acid phosphate has united with the ammonia in carbonate of ammonia forming phosphate of ammonia which will not break up on heating and so the ammonia is not lost. A large number of acid substances would have served as well but acid phosphate was chosen because of its practical importance. By the addition of acid phosphate to manure before boiling, no ammonia will be lost. The amount to add is of interest also. It can be calculated that for liquid manure of the strength described above, about 30 pounds of acid phosphate per ton of manure would be sufficient if all the nitrogen were present as carbonate of ammonia. Since it is not, this amount should be ample to prevent any loss.—F. W. Muncie in Gardening.

Small Fruits Vegetables

TELLS POTATO GROWERS HOW TO SAVE MILLIONS

MILLIONS of dollars of unnecessary losses are being suffered by the potato growers of California, the University of California now reports. Preventable diseases of the potato plant—this is declared by the university the cause of these immense and needless losses.

A striking example given by the university is that newly reclaimed land in the delta of the San Joaquin and Sacramento rivers will sometimes yield from 200 to 300 sacks of potatoes to the acre for the first year or two, while ten years later, after five alternate plantings of barley and potatoes, the yield often sinks to as little as 35 sacks to the acre. The spread of preventable diseases is the chief reason for this decline.

The university estimates that a million dollars a year is lost in the delta region from one single fungous disease, rhizoctonia, which lives on from year to year in the soil on the roots of various plants and then attacks the underground stolons of the potato plant and prevents the formation of tubers.

Other great losses are caused by two wilt diseases, due to the growth of two species of fungi in the stems, a growth which cuts off the supply of water from the roots. Moreover, these wilt diseases furnish means of entrance for jelly end, dry rot and other destructive fungous and bacterial diseases of potatoes.

"What must be done to prevent these costly diseases?" ask the potato growers. Here are some of the university's answers, as given in a circular, "Potato Growing in the San Joaquin and Sacramento Deltas of California," written by W. V. Shear, assistant horticulturist in the bureau of plant industry of the United States department of agriculture, and just published by the university.

The land which has become infected with potato diseases must be planted for several years with crops which are not subject to these particular diseases, in order that the fungi, worms and bacteria which are their cause may starve out of the soil. For this rotation it is best not to use alfalfa, peas, beans, clover or onions, but to plant certain other crops less likely to carry any of the potato diseases; for example, barley, oats, corn, buckwheat, broomcorn, ryegrass, hemp or celery.

Disease-free seed potatoes must be used. It is suggested that growers ought to cooperate in bringing such disease-free seed potatoes from some locality where the soil is not inoculated. If tenants will not do this, land owners should, stipulating in their leases that tenants shall plant only such seed as the owners furnish.

At harvest time potato growers should not leave the cull potatoes scattered over the field. No better way could be invented, says the university, for spreading fungi, worms and bacteria, which are playing havoc with the potato industry. The volunteer crop springing from the culls harbors disease.

European poptato growers, especially those of Great Britain and Germany, pay very strict attention to the quality and quantity of seed they use. This has led to the differentiation of the potato industry into seed and crop specialists. The seed specialist makes a business of producing high quality seed, while the crop specialist produces a high grade table potato. No such differentiation, at least to the same extent, occurs in this country. While it is true that in certain sections there is a well developed seed potato growing industry, but comparatively few growers in these sections are paying sufficient attention to the elimination of diseased and unproductive strains, or to keeping the variety grown free from mixture with other varieties.

Experiments made with insect-eating birds have proven that one bird will consume more than its own bulk of insects, daily. This fact alone should impress farmers with the great economic value of every insect-eating bird in relation to the well being of our crops.

Investigations show that within reasonable limits the larger the seed piece planted the larger is the resultant potato crop produced, says William Stuart, in Farmers' Bulletin 533. English and Scotch potato growers almost without exception plant whole tubers.

The middleman is nothing more than a farm hand but he is able to fix his own wages and to collect them and to multiply his transactions as he pleases.

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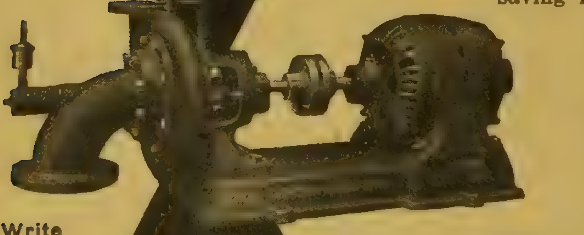

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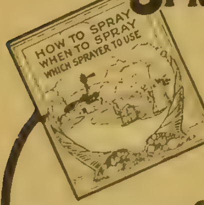

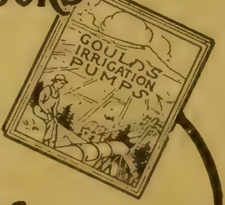

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Economics on the Farm

OUR FACTORIES RUNNING OVERTIME

We were told some time ago that the business depression in the United States was "psychological," which was perhaps true, but even this abstruse reason why so many of us were "short" of money, and orders, and other desirable things, is disappearing as by magic. How to fill orders more quickly, rather than how to get orders, is becoming the problem with many manufacturers, and the "hard times"—which, by the way, were local and not general—will soon be only a memory.

It was reasonable to suppose that the war would create a demand for American goods, especially for food supplies. But even the most optimistic of Americans could hardly have expected such a boom as has already set in. About a week ago it was announced that the shipments from New York alone on the day previous were valued at $6,105,076—a new record for the port.

These figures remained a record for just four days, for on one day this week the exports were valued at $6,183,812. At this rate the debit balance against us in Europe, which has been bothering the bankers and the treasury, will quickly disappear.

All parts of the country are profiting by this trade, and all sorts of manufactured goods as well as food supplies are being purchased in enormous quantities.

Within nine weeks $135,000,000 of goods have been shipped to Europe from Chicago. Shipments of wheat since July 1st have been 115,000,000 bushels, and the demand increases.

There is an enormous demand for horses from the allied armies. The west is being covered for mounts and draft animals by agents of the foreign governments. Over $3,000,000 has recently been spent for mules and horses, and were it not for the lack of sufficient freight room purchases would have been more extensive.

Dealers in Kansas City and St. Louis have taken a contract to deliver 10,000 mules at $185 a head, or a total of $1,850,000. In the past month Kansas City has sold 6500 horses for the English army at about $175 each, a total of $1,137,500, and the purchases are continuing. A contract for 20,000 horses for the French government has been awarded to St. Louis. On a basis of $175 a horse, this will mean an expenditure of $3,500,000. The allies are making purchases also at Chicago, Memphis, Fort Worth, Oklahoma City and Wichita. These horses are all sent to Canada, and are shipped to Europe from Montreal.

A shoe factory in New York state has shipped 100,000 pairs of shoes to Greece and is at work on another order of the same size. Great quantities of machinery are being shipped to Russia, one order including 800 lathes. Russia has also bought 1,200,000 woolen blankets. An agent of the British and French governments has bought 2950 motor trucks, the order being divided among four factories.

Scores of other similar items might be mentioned. Besides the goods sold direct to the belligerents, orders are coming from Italy and South America for machinery which has heretofore been bought in Germany. The South American orders are particularly welcome, as they represent the beginning of a trade which American manufacturers are planning to hold permanently.

There are many busy months ahead for the manufacturers of the United States, and more than one year of profitable markets for the American farmer. Let's all get busy.—American Fertilizer.

CAPITALIZING FARM LABOR

Written for the California Cultivator By Sacramento Valley Contributor

Farming is one business in which the labor of a man and his family can be made a part of the capital stock of the operation. For instance, a man buys a piece of irrigated land for $125 per acre—undeveloped. He checks the land for alfalfa, buys lumber and builds barns, houses and other buildings, and soon has a place that if rented would bring $20.00 per acre annually and, if operated by himself and handled wisely, will return a larger income. Allowing $3 from the $20, or $17 net, a valuation of nearly $300 per acre is established, figuring interest at better than five per cent.

Now a part of the difference between $125 and $300 is for lumber, seed and other things, and the element of time consumed in waiting for the alfalfa to start and grow is another, but a large part of it has been created by labor which, in this way, is made a part of the capital stock of the place.

Professor L. H. Bailey says that an acre of land is as big as the man who is working it. It may be an unimportant fraction of an unprofitable ranch or it may be furnishing the best part of the living for a family. Brains, muscle, energy and ability enter into the size and capacity of any farming proposition just as in all other business.

There are hundreds of acres of irrigated land in California that can be capitalized by intelligent labor to make them earn incomes on far greater sums than $300 per acre, but other lands similar in every way and adjacent, perhaps, may not be earning interest on a $40 per acre valuation in ten years from now. It all depends on the man on the job.

AND SHE KEPT ON SMOKING

"Aunt Chloe, do you think you are a Christian?" asked a preacher of an old negro woman who was smoking a pipe.

"Yes, brudder, I 'spects I is."

"Do you believe in the Bible?"

"Yes, brudder."

"Do you know there is a passage in the Scripture that declares that nothing unclean shall inherit the kingdom of heaven?"

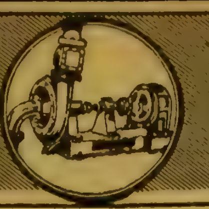
"Yes, I'se heard it."

"Well, you smoke, and there is nothing so unclean as the breath of a smoker. So what do you say to that?"

"Well, when I go dere I 'spects to leave my breff behind me."—"Kansas Farmer."

The economic distribution of farm products is today the world's greatest problem.

Irrigation Forestry



AN IDEA FOR SETTLERS ON IRRIGATION PROJECTS

Written for California Cultivator
By Sacramento Valley Contributor

IN every irrigation project there are always some pieces of land that are neither occupied nor cultivated until many of the surrounding tracts are partially or fully developed. They are unsightly, ragged looking patches on what would otherwise be an attractive landscape. The roadsides along such pieces grow up to weeds and there is a general air of desolation.

The suggestion we have to make is that the people who live adjacent to or near these tracts get in touch with the owners and make arrangements to put in some kind of crop, even if it is only barley or wheat for hay, and plant it well out into the road so that when it is cut in the summer the area will have a "cleaned-up" look until it is ready to sow again, then the growing grain looks well, and so on until some more intensive development is undertaken.

Everyone in the community will be benefited if such a proposition is taken up and generally carried out. First, the settler living near should get some profit for his work, and in the increased value of his property because of the better appearance of the neighborhood there should be a further benefit. Then the whole district, and consequently the reputation and value of all property from a homemakers standpoint, will be enhanced. Finally, the non-resident owner will be able to sell for more should it be impossible for him to develop his property as he may have planned.

The non-resident owner of the ragged unimproved land is certainly the last to be considered, for either as a deliberate speculator or an unfortunate victim of circumstances by which he is prevented from developing his property he is reaping the benefit from the development his neighbors are making on surrounding land. From the standpoint of the residents he is entitled to but little immediate return from his land and if anyone had in mind the purchase of such a piece of property they would not do anything to increase its selling price. But as a general thing this policy would result in more harm to the residents than to the owner of the undeveloped land.

The more quickly all of the land in a new section is improved the greater the benefit to all.

A MINER'S INCH

The following may be of interest to water users. The first taken from Colorado statutes, section 7026, series of 1891.

Water sold by the inch by an individual or corporation shall be measured as follows, to-wit: Every inch shall be considered equal to an inch-square orifice under a five-inch pressure and a five-inch pressure shall be from the top of the orifice of the box put into the banks of the ditch, to the surface of the water.

From California statutes, sectional, page 660, we take the following:

The standard miner's inch of water shall be equivalent or equal to one and one-half cubic feet of water per minute, measured through any aperture or orifice.

From section 4855, series of 1899, Montana statutes, we take the following:

Where water rights expressed in miner's inches have been granted, 100 miner's inches shall be considered equivalent to a flow of two and one-half cubic feet (18.7 gallons) per second; 200 miner's inches shall be considered equivalent to a flow of five cubic feet (37.4 gallons) per second, and this proportion shall be observed in determining the equivalent flow represented by any number of miner's inches.

The only other state we are able to obtain information from is Nebraska. We quote from section 6811, series of 1895, as amended by section 23, page 510, series of 1911:

What is known as the miner's inch shall be regarded as one-fiftieth of a cubic foot per second in all cases.—S. L. Macdonald, Colorado Agricultural College.

FARM BUREAUS IN CALIFORNIA

Alameda County, W. H. Nixon, Adviser

San Leandro, Wednesday, December 2; Castro Valley, Friday, December 4; Hayward, Monday, December 7; Pleasanton, Wednesday, December 9; Oakland Day, Friday, December 11; Murray Township, Monday December 14; Irvington, Tuesday, December 15; Centerville, Friday, December 18; Newark, Monday, December 21; Niles, Wednesday, December 23.

Napa County, H. J. Baade, Adviser

Browns Valley, December 2; Coombsville, December 3; Salvador, December 5; Napa, December 7; Fly District, December 9; Soscol, December 11; Carneros, December 14; St. Helena, December 16; Calistoga, December 18; Berryessa, December 23; Rutherford, December 25; Howell Mt., December 26; Wooden Valley, December 28; Pope Valley, December 30.

Soil fertility and the importance of cover crops to our soils will be discussed at these meetings.

Madera County, Thos. C. Mayhew, Adviser

Eastin, 10 and 11.
Coarse Gold, 14 and 15.
Oakhurst, 16 and 17.
Nipinnawassee, 18 and 19.
North Fork, 21 and 22.

San Joaquin County, Frank Lyons, Adviser

December 14, Lockeford, N. H. Locke, director; December 17, Ripon, E. A. Clough, director; December 18, Manteca, J. P. Watkins, director; December 21, Escalon, J. W. Graves, director.

Officers for the year 1915 are being elected at the center meetings. Five sections have already held their elections with the following results: Thornton, Ed. Barber, director, and Robert Nichols, president. Linden, Ed L. Davis, director Amos Swank, vice-director, and Evans Bluett, secretary. Escalon, E. A. Clough, director; C. Campbell, president; L. J. LeTourneau, vice-president, and F. L. Browne, secretary. Ripon, J. R. Watkins, director; A. R. Magruder, president; H. L. Dickey, secretary, Manteca, J. W. Graves, director; W. W. Cowell, president; Mrs. G. F. Dryden, secretary.

At the annual meeting of the San Joaquin County Farm Bureau, held on October 24, the following for the year 1915 were elected: President, Ed Powers, Manteca; vice-president, Asa Clark, Stockton; secretary-treasurer, J. P. Irish, Jr., Stockton; directors-at-large, J. E. Aggeler, Holt; Amon Swank, Linden; George Ashley, Lodi; Frank Boggs, Stockton.

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Let the holes lie open during the winter. Then plant the trees at the regular time next year.

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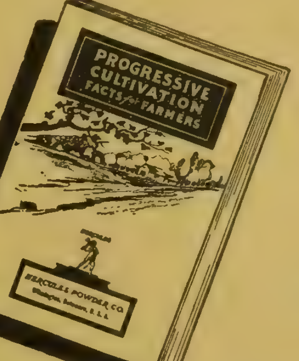
When two trees are planted at the same time and in the same orchard, one in a spaded hole, the other in a dynamited hole, the growth and development of the latter is invariably almost twice that of the former. This difference always shows when Hercules Dynamite is used.

If you are not thoroughly familiar with the advantages gained by using dynamite on the farm, write today for "Progressive Cultivation." It contains valuable information on tree planting, subsoiling, stump and rock blasting, drainage work and other agricultural activities.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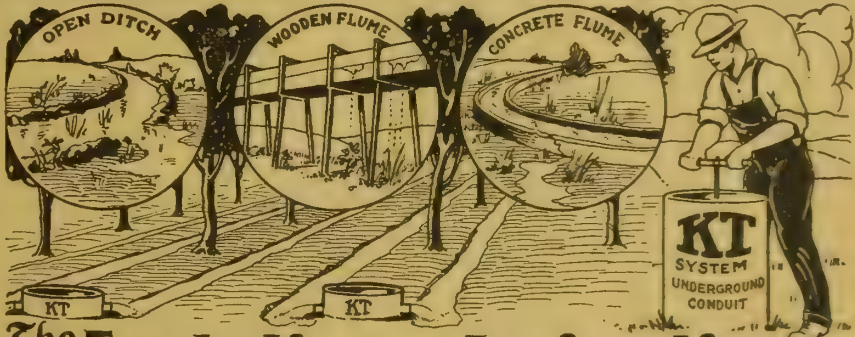

The Evolution of Irrigation

It is only a comparatively few years since practically all irrigating in California was done by means of open ditches. These gradually gave way to the use of wooden and concrete flumes. Today, however, all these methods have been almost universally superseded by the "K-T" SYSTEM of underground conduits—which provides for a perfect distribution of the water at the exact spot required, and at just the time it is needed. Fill out the attached Coupon for the "K. T." Brown Book on Irrigation, or write for any information you may require.

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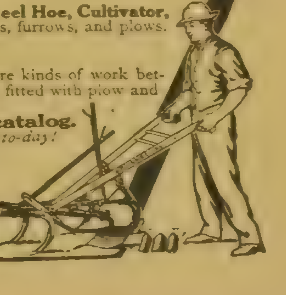

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The California Cultivator

Rural Californian combined with the California Cultivator

A Journal of Horticulture and Agriculture

By
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R. M. Teague, Vice-President.
C. B. Messenger, Editor.

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Entered at the Post Office at Los Angeles, California, as Second-Class Matter.

Thursday, Dec. 10, 1914

OUR ADVERTISERS RELIABLE

We guarantee our subscribers against loss through dishonesty of any advertiser in the Cultivator. We do not attempt, however, to adjust trifling differences between subscribers and honest, responsible advertisers, nor will we pay the debts of honest bankrupts. Notice of complaint must be sent us within 30 days from date of the transaction, and the subscriber must have mentioned the Cultivator when writing the advertiser.

DOLLAR WHEAT

An enthusiastic Canadian wheat grower predicts that before the end of 1915 wheat will go to two dollars per bushel. He takes this position because of the destruction of vast quantities of wheat in Europe and existence of conditions which prevent production. In any case he feels there can be no mistake in making every American farm produce to its limit during the next year. After the Franco-Prussian war it is stated that wheat in Chicago was quoted at $1.63, this caused primarily as the result of the war in the two countries of France and Prussia.

FOOD TO THE BELGIANS

A bit of the suffering of the stricken Belgians may be lessened by the ship Camino which sailed last week from San Francisco and on Tuesday from Los Angeles harbor, carrying some 6,000 tons of food products, all a free-will offering from California. It is well that from our abundance we should send this shipload direct to the starving people. The vessel will go through the Panama Canal, thence direct to London for fuel supplies, thence to Rotterdam, from which point the food will be distributed by Dr. Henry Van Dyke, United States minister to Netherlands.

AGRICULTURAL BULLETINS

The United States department of agriculture issued during the past year, and distributed to the agricultural interests of the United States, over 38,000,000 copies of bulletins and circulars. This was 44 per cent more than any previous year. The publications included 55 new farmers' bulletins in addition to the many reprints of former issues. Something over 8,000,000 were distributed on orders of senators and representatives. A new educational feature put out by the department during the past year is the making of motion picture films of subjects of educational value. Fourteen thousand feet of films, covering some 19 subjects, were manufactured.

BUILD LARGE

The flurry caused by the declaration of war some months ago and the feeling on the part of some that great wealth was in store for this country because of war conditions in Europe have passed and America is settling down to meet the problem which has been brought her.

The immediate problem is the alleviation, so far as possible, of the terrible suffering, largely on the part of non-combatants. That problem is being bravely met by many different organizations, and the entire United States is combining in the work, but for the future it appears thare will be a great drain upon this country for staples, and we believe that every producer should plan large for the coming year's work. As to what prices may be secured no one can tell—presuambly they will be good—but the duty is before us and must be met.

PANAMA-CALIFORNIA

Only three weeks till the opening of the Panama-California Exposition at San Diego. There have been larger expositions, and the Panama-Pacific at San Francisco will exceed it very greatly in magnitude of buildings and number of exhibits, but in beauty of setting there has never been, and we believe never will be one that will outrank San Diego. The landscape architects have reason to be proud of the results achieved.

In every way it is typical of southwestern America. Every building, even to the concessions, carries out the same idea, and this effect is increased by the Spanish costumes of the attendants. We believe that every visitor will feel that he is in far away South America or in dreamland. As great as is the exposition at San Francisco, the one at San Diego will be well worth a visit by every Californian, in fact, every visitor to the state during the next 12 months. Plans are now in the making for a great event on the night of December 31 and the early morning hours of January 1.

EFFECTIVE WORK

The vigor with which the eastern Washington authorities took hold of the foot and mouth disease problem has apparently stamped out this disease from the section about Spokane. It appeared in a herd of pure-bred Holsteins which had been purchased in Wisconsin and shipped to Spokane. There were 101 of these pure-breds, aggregating in value about $25,000. They had been purchased by a progressive farmer who proposed to build up one of the greatest herds of Holsteins in the West. As soon as the cattle were unloaded at Spokane it was found that they were affected with this disease. They were immediately corralled, surrounded by patrols and every possible disinfection method observed. Later the animals were slaughtered, and every carcass burned, as were the corrals and all combustible material which had been used near them, even to the clothing of attendants. It is now felt that there is no possible danger of spread of the infection from this center. The compensation for the $25,000 worth of stock was about $4,000 paid by the department. The payment was based on meat values.

SUGAR FROM CANE

Notwithstanding the discouragement felt by many sugar beet growers because of tariff manipulations, there continues to be talk of still greater sugar production in the United States. It has usually been thought that our production would increase, if it did, along the line of beet sugar. But we note that a most successful experiment with sugar cane is being worked out in Arizona, and already many Californians are asking as to the possibilities of sugar cane. Especially in the Imperial is interest being awakened. It matters not which kind of sugar is produced, but it does matter that the United States should produce a greater proportion of the sugar it now consumes. In beet sugar production the United States stands fifth. European countries rank as follows: Germany 2,616,700 tons, Russia 1,723,700 tons, Austria 1,628,300 tons, France 781,020 tons, Italy 327,800 tons, Belgium 226,200 tons, Holland 225,300 tons, Spain 160,000 tons, Denmark 145,700 tons, Sweden 136,500 tons, Roumania 34,000 tons, Bulgaria 7,800 tons, Servia 6,500 tons, England 4,600 tons, Switzerland 4,050 tons. Total 8,118,190 tons.

The total production of the United States in beet sugar is 625,314 tons, and yet there is no country which offers such possibilities for sugar production as the United States.

COMPULSORY COOPERATION

That the few should be compelled to cooperate for the benefit of the many is not new along some lines of public welfare, but in the marketing of products of farmers, it surely will be a novel proposition. As novel as it may appear, it has been suggested by a fruit grower of Fresno County. At a meeting of fruit growers recently held in that great fruit growing center a special committee reported on a proposed law meant to insure the establishment of a great fruit exchange on the same basis as the drainage and reclamation districts. As stated by one of its friends, perhaps this might work out, and to the advantage of the fruit industry. We wish it could be made operative, for there is certainly a great injustice done to the fruit growers by those who throw their fruit into the market and cut prices. We will watch the working out of the suggestion of the Fresno grower with great interest.

"The scheme proposed is to have a law enacted under the provisions of which we can organize a cooperative exchange on the same principles as reclamation districts, drainage dikes, irrigation districts, etc. That is, when a majority of the growers, say 66 per cent, have signed up it obliges all growers to become a part of the exchange organization.

"By illustration, if the Associated should get 66 per cent of the growers to sign up under its contracts, then all of the growers of raisins would be forced into the cooperative marketing plan. Under the present plan of marketing peaches there is no incentive to produce an extra high quality, for the fruit is sold at the same price. This is a great disadvantage, and the organization fails to meet the needs of the growers."

Agricultural Notes

The native Cuban walnut has been found a very desirable stock on which to graft imported varieties of walnuts and pecans.

Size of orange boxes is prescribed by the government of South Africa. Much attention is being given to careful handling and packing of fruit.

Federal reserve banks have been opened in 12 cities of the United States. The bank for the Pacific coast states is located at San Francisco.

The Florida Growers' and Shippers' League has sent out a second appeal for funds with which to fight the citrus canker. Fifty thousand dollars is the sum they have set out to raise.

Farmers of Rhodesia, South Africa, have made trial of the tepary bean, but have so far found it not the heavy bearer reported in Arizona. It has proved very susceptible to attacks of the stem maggot.

Forty-six merchant vessels are now in the regular trade between New York and California ports, passing through the Panama canal. The time in transit from New York to San Francisco ranges from 20 to 27 days.

A single shipment of 3,000,000 eggs from western states was recently exported to England from Boston. The reduction in England's egg supply from Russia on account of the war is said to have brought about the shipment.

The success of onion growers of Antigua, British West Indies, in marketing their crop in Canada has suggested that other vegetables may profitably be placed there during the winter. Tomatoes and pumpkins have arrived in best of condition.

In parts of Maine, New Hampshire, Massachusetts and Connecticut, the department of agriculture has imposed a quarantine on the transportation of stone taken out of quarries, the reason being that stone has been found to carry eggs of the gipsy moth.

Under the quarantine imposed because of the foot and mouth disease, the requirements as to inspection and certificate apply not only to animals, but also to straw imported from foreign countries, used as packing for merchandise and also (at many places) wool.

A farm demonstration train made a five months' trip in the Philippine Islands during the past spring and summer. One to three day stops were made at all towns, the subjects covered being rice and sugar production, animal industry, locust extermination and vegetable and fruit culture.

By conservative estimate 300 fires or so-called explosions occurred in wheat threshers in eastern Washington this past season. Investigation has not shown that these were caused by incendiarism as at first supposed, owing to their unusually frequent occurrence. Effort is being made to determine a practical way of controlling these smut explosions by live steam or other means.

A process has been perfected for solidifying molasses into blocks. This overcomes the difficulties previously attendant on the shipment of molasses, involving as it did the employment of expensive packages and the handling of a product which owing to its liability to frothing frequently gave rise to trouble and loss. It is stated that in its best form the product is black or dark green in color; never red or reddish bown; it should be brittle and in appearance vitreous.

Agricultural News Notes of the Pacific Coast

Northern California

A rice mill is to be built at Willows, Glenn County.

A rice paper mill is in prospect for Colusa County.

A 150,000-tree nursery will be started at Orland, Glenn County.

Sutter County is to strengthen and heighten many of the levees along the river.

Ukiah, Mendocino County, shipped over ten tons of Thanksgiving turkeys.

One train of 34 cars of cattle was recently shipped from Dorris, Siskiyou County.

Honey Lake Valley Acres will be watered by an irrigation project now contemplated.

Big shipments of celery are now going out from the delta region of the San Joaquin.

Large quantities of farming land near Hamilton, Glenn County, have recently been sold.

A farmers' institute was held at Grass Valley, Nevada County, on Tuesday and Wednesday.

Modoc County has shipped 15,000 head of beef cattle to the San Francisco market this season.

The Yolo County farm bureau is urging dairymen not to breed heifers earlier than 15 months old.

One company raising rice in the Sacramento Valley has marketed $225,000 worth this season.

Orange growers of Lincoln, Placer County, have formed an exchange and are now ready for sending out citrus shipments.

Fifty thousand acres of rich marsh land in Siskiyou and Modoc Counties are to be opened for settlement on December 30.

Commissioner Harney of Yuba County reports common barnyard millet as seriously infesting some of the rice fields.

Experiments with cotton in Sutter County have proven satisfactory this past season. Durango long staple was the variety grown.

Five thousand acres near Grass Valley are to be given irrigation water, providing a vote on $75,000 bond proposition carries.

Turkey raisers of Lodi, San Joaquin County, are selling turkeys at 20 cents per pound, live weight, which is lower than they had hoped to sell for.

Farm Adviser Hecke, of Yolo County is joining Adviser Baade of Napa County in furthering better agricultural methods in both counties.

Even the far northern section of Shasta County is planting oranges. The first fruit ever shipped from that county was recently harvested at Olinda.

The Cattlemen's Protective Association composed of breeders interested in beef cattle was recently formed in San Francisco. Ed. de L. Cebrian, was appointed secretary.

The waters of the Feather River are to be made navigable to a higher point than heretofore and this, it is thought, will be of great benefit to Yuba and Sutter Counties.

Central California

Exeter's new creamery was formally opened last Monday.

Kern County farmers are investigating as to the advisability of raising rice.

A farm bureau center has been organized at Newman, Stanislaus County.

The Modesto Farmers' Union held an all-day reorganization meeting at Modesto December 1.

Plans are being made for the reclamation of lands of the Tulare Lake section of Kings County.

The Kern County farm bureau held a meeting of special interest to hog breeders on December 3.

A raisin thief at Fresno was recently convicted and sentenced to serve three years in San Quentin.

Tulare County has already shipped part of its exhibits for the Panama-California Exposition at San Diego.

The summer session of the State Fruit Growers is scheduled for Stanford University, probably the last week in July.

The Stanislaus County board of trade is distributing over 80,000 postcards, illustrating the dairy industry of the county.

The Stanislaus County Poultry Show, which opened at Modesto, December 2, was a success in exhibits and in attendance. The birds were judged by the score card system.

It has been proposed to locate a cooperative cannery at Kingsburg. Others interested are talking of securing one or more privately owned canneries. Anyway Kingsburg wants a cannery.

The crop estimates put forth by the United States Department of Agriculture November 1 announces that the raisin grape yield in California is 7,300 pounds per acre, against 4,000 pounds last year, and the production is fixed at 91 per cent of a full crop. The quality of the raisin grapes is set at 96 per cent perfect.

The Madera Cooperative Creamery paid to dairymen for butterfat during November $4,660. A total of 15,000 pounds of butter was made, which is an increase of 200 pounds per day over the previous month. The dairy industry is growing rapidly in Madera.

Attention of the state health board has been called to the fact that the Porterville fruit brokers have been buying in this district and surreptitiously shipping to bay district markets small consignments of fruit for which the Tulare County authorities have refused inspection certificates, setting forth the fact that the oranges are up to the standard of maturity approved by the pure food division of the bureau of chemistry.

It is estimated that Tulare County's yield of Navels, Valencias and lemons will be 5,500 carloads, as compared with 5,800 carloads for last season. The reason for this falling off is in the light Valencia crop, which indicates now about a half crop. Last season the Valencia harvest amounted to 1,500 carloads, but next summer's shipments will probably not be over half that amount. The lemon crop is somewhat larger than last season.

Southern California

Riverside orange packing houses are planning for the heaviest run ever.

The Imperial Valley is becoming interested in the growing of sugar cane.

Orchardists of the Rio Linda section are purchasing nursery trees cooperatively.

"Plant Poppy Seeds Everywhere" is the slogan of many sections of California.

Brawley, Imperial County, is receiving large shipments of live stock for finishing.

A San Diego olive producer claims to have contracted for his crop at the rate of $225 per ton.

San Bernardino is planning great events for National Orange Show week, February 17-24.

The shortage of fall rains has been one cause of many forest fires, which have done much damage in mountain ranges.

Citrus growers have watched thermometers with anxious eyes during the past week. As yet no damage has been done.

Arroyo Grande and Santa Maria Valleys have supplied the beans for the first cargo of beans through the Panama Canal.

The authorities of Imperial County are discussing the matter of livestock quarantine to prevent introduction of livestock diseases.

The lima bean show held at the court house at Ventura brought out many contestants and a great showing of fine limas was made.

A representative of the University of California has been organizing the high school boys of the San Fernando Valley into an agricultural club.

The first coating of white on the Sierra Madre mountains was the result of the recent storm. The storm was very light and did but little good.

Hemet has organized a farmers' club. Dr. J. R. Wilson is president and Louis M. Jackson, secretary. The subject of the next meeting will be walnuts.

The Inland Waterways Association is aiding the settlers of the Imperial Valley in their campaign for an appropriation from congress for the control of the Colorado.

C. C. Brashear, secretary of the chamber of commerce of El Cajon, San Diego County, writes that the chamber is endeavoring to secure a cannery for that section.

The seven associations handling citrus fruits of Orange County through the California Fruit Growers' Exchange report about 75 per cent of the oranges in that county controlled by those organizations.

San Fernando is shipping more lemons than any preceding year. Out of her abundance she will, on next Saturday, send truckloads of lemons to Los Angeles, which will be sold for the benefit of Belgian sufferers.

The Placentia Orange Growers' Association, in annual meeting recently, elected the following directors: A. Pierotti, president; L. P. Drake, vice-president; William Berkinstock, treasurer. Abe Pritchard was elected secretary and manager.

The Coast

Oregon apples are going to Siberia.

The poultry show closed last week at Mount Vernon, Washington.

One thousand bales of cotton have been ginned at Chandler, Arizona.

Canyon City, Oregon, is sowing more grain than any preceding year.

The short course of the Oregon Agricultural College will begin January 4.

Several small ranchers near Chandler, Arizona, are engaging in ostrich farming.

Montana stockmen report livestock in better condition at this time than for several years.

Farmers' Week will be observed at the Oregon Agricultural College, Corvallis, February 1-6.

Farmers of Idaho met in Twin Falls last week and held a convention and exhibit of pure seeds.

New barns are being erected on the grounds of the Northwest Live Stock Association, at Moscow, Idaho.

The Maricopa County Poultry Association is holding its annual convention this week at Phoenix, Arizona.

Apple growers of the Northwest complain that the war has affected the dried apple market unfavorably.

Because of government regulations regarding disinfection several cars of sheep were held up at Flagstaff.

Nineteen cars of range cattle were recently shipped from Prescott, Arizona, to Tempe for winter feeding.

The union stock yards at Portland, Oregon, report the cattle market steady, with good stock being offered.

Range cattlemen of the Gila national forest of Arizona met at Silver City and perfected a strong organization.

Irrigationists of Oregon are urging an appropriation of nearly half a million dollars for reclamation work in that state.

Business men of Wenatchee, Washington, are urging for cold storage and by-product plants which will handle fruit wastes.

Hop growers at Salem, Oregon, are discussing the matter of formation of a large corporation to finance marketing operations.

Homestead settlers may enter lands under the Klamath project in Oregon and the extreme northern portion of California on December 30.

The Pure Bred Live Stock Association of Arizona held a banquet during state fair week. It is one of the strongest organizations in the state.

The Third Annual Farmers' Short Course will be held at the University of Arizona, Tucson, January 4-16. Several addresses will be made by Dr. H. J. Webber of California.

Oregon hop growers organized an association at Salem the first of the month, 125 growers becoming members at the initial meeting. Delegates from similar associations organized in Oregon, Washington and California will meet in Salem the latter part of the month and organize the Pacific Coast Association.

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Live Stock and Dairy

BARLEY AND WHEAT, WHOLE OR GROUND, DRY OR WET, FOR PIGS

Written for the California Cultivator
By Leroy Anderson

IN order to find definite experiments upon this question it is necessary to go to the records at eastern experiment stations.

Barley

The following figures are from Bulletin No. 40 of the Colorado station on feeding whole and ground barley:

	No. of Tests.	Average Weight at Beginning.	Ave. Daily Gain.	Feed for 100 lbs. Gain, lbs.
Whole bald barley......	8	88	.58	500
Ground bald barley....	5	67	.74	360
Whole common barley	4	68	.49	540
Ground com'n barley..	4	47	.70	430

This experiment shows great gains in feeding ground over whole barley. With common barley the gain is about 20 per cent and with bald barley 28 per cent. The figures, however, are not comparable with those quoted in other experiments because skimmed milk was fed with the barley in the Colorado tests. It is presumed that the barley was really ground and not rolled, as is the custom in California.

The Ontario (Canada) agricultural college in its annual report for 1891 gives the results of experiments in feeding whole and ground grain to pigs. Barley was not fed alone but with peas, equal parts of each fed dry.

Feeding barley and peas, equal parts to pigs.

	No. of Pigs.	Ave. Weight Beginning, lbs.	No. of Days Fed.	Ave. Daily Gain, lbs.	Feed per 100 lbs. Gain, lbs.
Feed ground......	3	107	91	1.43	407
Feed whole........	3	109	91	1.22	477

This experiment shows a gain of over 14 per cent in grinding rather than feeding whole barley and peas.

Wheat

The Utah experiment station in Bulletin No. 70 reports an experiment on the comparative value of chopped or whole wheat for pigs, both fed dry:

	No. of pigs.	Ave. Weight Beginning, lbs.	No. of Days Fed.	Ave. Daily Gain, lbs.	Feed per 100 lbs. Gain, lbs.
Chopped wheat	2	126	135	1.22	431
Whole wheat..	2	148	135	1.23	444

This experiment shows a slight gain, about three per cent for the chopped wheat over whole wheat. It is doubtful if this is sufficient to pay for the cost of chopping.

The Nebraska experiment station reports in Bulletin No. 75 a test with whole wheat dry, whole wheat soaked 18 to 24 hours and ground wheat mixed into a thick slop. The soaked and ground wheat were both weighed before being wet. I insert the item of soaked wheat here to save repetition of the experiment below.

Wheat, whole, soaked or ground, for pigs.

	No. of Pigs.	Ave. Weight Beginning, lbs.	Ave. Daily Gain, lbs.	No. of Days Fed.	Feed for 100 lbs. Gain, lbs.
Whole wheat, dry	6	110	.63	91	637
Whole wheat, soaked	6	110	.70	91	575
Ground wheat....	6	108	.76	91	559

The author's comment upon this test is that "ground wheat gave the greatest return for the least amount of grain, but did not return so large a profit as whole soaked wheat, owing to the expense of grinding (eight cents per 100 pounds). The undesirability of feeding whole wheat dry seems to be indicated by these results."

Corn

There are few reports upon experiments in grinding barley and wheat for pigs, because most of the experimentation has been conducted in eastern states where corn is the chief feed for fattening pigs. On this subject the researches of Dean Henry of Wisconsin have been the most exhaustive that have been undertaken. His summary of seven years' winter feeding, as published in the 19th annual report of the Wisconsin station, will be interesting as a side light on the merits of ground and unground grain.

Ground and whole corn.

Year.	No. of Pigs in Each Lot.	Ave. Weight Beginning, lbs.	Condition at Beginning.	Saved by Grinding.
1896......	9	350	Thin	8 Pct.
	10	224	Fat	17.6 Pct.
1897......	9	211	Rather fat	11 Pct.
	7	190	Rather fat	*9 Pct.
1898......	8	185	Rather fat	5.4 Pct.
	8	184	Rather fat	8.4 Pct.
1899......	19	186	Rather fat	*2 Pct.
1900......	14	175	Rather fat	15 Pct.
1901......	12	146	Rather fat	6 Pct.
1902......	6	71	Fair	*1 Pct.
	6	80	Fair	3 Pct.
	6	133	Rather fat	8 Pct.

*Lost by grinding.

Dean Henry states that "the average saving by grinding was six per cent, an amount too small to pay for grinding in most cases.

Barley and Wheat, Dry or Soaked

1. At the Missouri station (reported in Bulletin No. 29), two lots of pigs were fed wheat chops and two other lots a mixture of four parts whole wheat and one of bran. The wet grain was fed after being soaked 36 hours.

2. Bulletin No. 70 of the Utah station reports two tests in which wheat formed a part of the ration. In the first two lots were fed a ration of equal parts of wheat and bran. In

the second three lots of pigs received a ration of equal parts by weight of bran and chopped wheat. One lot received dry meal, one meal that had been soaked 12 hours and one meal wet just before feeding.

3. The Canada central experimental farm in the annual report for 1900 reports feeding four lots of pigs on a mixture of equal parts of peas, barley and wheat. Lot I received whole grain soaked 30 hours. Lot II received whole grain dry. Lot III received ground grain soaked 30 hours and Lot IV ground grain dry.

Tables of results from the three experiment stations are as follows:

	No. of Pigs.	Ave. Weight Beginning, lbs.	No. of Days Fed.	Ave. Daily Gain, lbs.	Feed per 100 lbs. Gain, lbs.
1. Missouri—Wheat chop:					
Dry	3	111	99	1.89	416
Wet	3	112	99	2.04	400
Whole wheat 4-5, bran 1-5:					
Dry	3	118	99	1.39	508
Wet	3	119	99	1.26	550
2. Utah—Wheat and bran:					
Dry	2	83	112	1.32	436
Wet	2	69	125	1.25	470
Bran and chopped wheat:					
Dry	3	91	110	.65	643
Wet	3	93	110	.82	525
Soaked	3	86	110	.71	581
3. Ottawa, Canada—Peas, wheat and barley whole.					
Dry	4	67	119	.90	408
Wet	4	66	119	.88	388
Peas, wheat and barley ground:					
Dry	4	69	119	1.06	356
Wet	4	66	119	1.04	376

Bureau of Animal industry Bulletin No. 47 on the hog industry summarizes the above and experiments from five other stations in feeding many kinds of grain as follows:

Dry grain or meal required for 100 lbs. of grain	44 lbs.
Wet or soaked grain as meal for 100 lbs. of grain	434 lbs.
Amount of grain saved by soaking	10 lbs.

In all of the above tables the point to be especially noted is the amount of feed required to make 100 pounds of gain. In this summary the 10 pounds of feed saved in making 100 pounds of gain by wetting or soaking is but two per cent. This would seem hardly sufficient to pay for the labor and expense of soaking. Dean Henry concludes that "It is safe to hold that, if not unusually dry and hard, such large grains as corn and peas are at best but slightly improved by soaking, while all small, hard grains, such as wheat, are materially improved thereby. Any grain so hard as to injure the mouths of animals during mastication should always be ground or soaked.

Conclusions

Judging from the experiments quoted above, it would seem that so far as barley is concerned, one is safe in following the California custom of preparing the grain by rolling and that it is more economical to feed rolled barley dry than wet. To save labor a good way is to build a hopper into which may be placed a quantity of rolled barley and to which the pigs have continual access. Also have clean water always before them for drinking. For their health they should also have constantly in reach a mixture of such things as wood ashes, charcoal and salt.

At prevailing prices it is not evident that much wheat can be fed to fattening hogs in place of barley. San Francisco quotations on California Club wheat are $1.90 to $2.00 per 100 pounds. This is the cheapest. On barley $1.20 to $1.25 per 100. Add ten cents for rolling and barley is $1.35 per 100, or in ton lots rolled barley is quoted at about $26.00. For fattening hogs, wheat is "not in it" at the price with barley unless it is damaged wheat or for some reason cannot command the market price. If the wheat is good I see only one reason for feeding it, viz., to give a variety to the ration. In that case one-fourth wheat to three-fourths barley would suffice. In this instance it might be mixed with the rolled barley without grinding, as that amount would be well masticated with the barley. Or if rolled with the barley, the process would serve as a good preparation—and feed dry.

FOOT AND MOUTH DISEASE DANGERS

We sincerely hope that the quarantine in the middle west where foot and mouth disease is causing so much loss and inconvenience will be sufficiently rigid that we may have no outbreak in California.

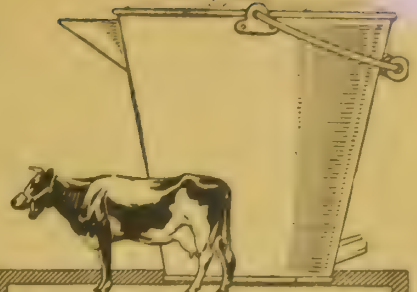
Some very interesting things have developed in connection with this epidemic, and some of them will be of value to California farmers whether we have the disease here or not.

All germ diseases are dangerous because there are so many ways that infection may be carried, and this seems to be particularly true of diseases of farm animals. During this outbreak in the east these dangers have been taken into consideration and warnings have been widespread and emphatic that all kinds of disease carriers be kept away from infected animals.

Perhaps the greatest agency in transmitting the disease from infected to clean animals is the curious human being, the man who wants to see but who does not realize that his hands and clothing, and particularly his shoes, may be the means of carrying germs to as many herds or places as he may later visit. The excretion from the sores in the mouth and on the feet of affected animals will be deposited on hay and grain and mangers and other parts of buildings, soil and manure in yards and fields may be infected, and no one should visit a herd unless a most rigid disinfection and fumigation follows. Officials and veterinarians who visit the diseased herds in the east wear rubber boots, coats, gloves and hats that may be washed with strong disinfectant and are fumigated with a gaseous disinfectant to kill any germs on their clothing or bodies. It is related that one man in an eastern state who was curious to see what the disease looked like went to an infected herd and examined the diseased animals, opening their mouths with his bare hands to see the ulcers. Then, without even so much as washing his hands, he went home and examined his own cattle in the same way. He infected every one of his own cows that he touched, and soon his whole herd had the disease. An unconquerable curiosity coupled with ignorance of the ease with which contagion is spread is quite as disastrous in hog cholera epidemics.

War is also being waged on pigeons, crows and all kinds of birds that come around barnyards. Thousands are being shot, and dogs that come around infected farms are meeting a like fate.

Barnyard birds and worthless cur dogs are of no benefit to a farm or a community. We have so many kinds of animal diseases now that can be spread by these sources that it will pay to be on the lookout for them at all times and by killing off the few that may be around put a stop to their increase.



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THE SUMMER SILO

Pastures do not generally furnish enough food for dairy cows during the hot dry summer months. It is well known that when the milk flow is once diminished by unfavorable conditions it is impossible to bring the cows back to a normal yield when conditions again become favorable. In view of this fact it is generally recognized by dairymen, and especially those on high-priced land, that the pasture must be supplemented by the use of the summer silo or by a system of soiling. By soiling is generally meant the growing of certain green crops that can be harvested as they are needed.

The use of silage or the soiling system results in an increase in the number of cows that can be kept on a given acreage. Both systems have the advantage of saving land, fencing and increasing yield of food and manure, besides resulting in a greatly increased production of both milk and butterfat. Which system is the most economical will depend upon local conditions and the price of labor.

With a view to securing some reliable data as to the comparative cost of using the summer silo or the soiling system, the Wisconsin agricultural experiment station conducted experiments with their dairy herd of 24 cows for three seasons, 1910, 1911 and 1912, and the Nebraska experiment station for one season, 1913, both reaching the same conclusion, that the summer silo was by far the most economical and that it was a necessity on the dairy farm.

It was found that as a means of keeping up the maximum milk flow during the hot dry summer months the soiling system was very nearly as efficient as silage, but the relative expense of producing and feeding soiling crops was considerably greater than that of silage. The daily harvesting of soiling crops in all kinds of weather and in the limited quantities required was the most inconvenient and expensive system of harvesting that could be employed. The expense incurred in the Wisconsin experiment in this connection was from $12 to $15 per month, for which no adequate increased returns in the milk production were obtained over that secured in the use of silage.

It is evident that it requires less labor to plow, fit and plant an entire field of corn for silage than it does to plow, fit and plant at different times a number of small plats to furnish a variety of soiling crops during the summer. The harvesting of corn for silage is done at much less expense for the reason that a well organized force of men and machinery to fill a silo in a single operation saves not only time but enables the work to be accomplished more efficiently.

CHOPPED FEED FOR HOGS

Written for California Cultivator
By G. A. Webb

After searching the market for several months we secured a cutter which can be run successfully with a five horsepower engine. With this machine we cut our alfalfa hay so fine it resembles meal. Five hundred pounds per hour is the capacity where pure alfalfa is cut. Corn is harder to cut, and with our power we can run through from 350 to 400 pounds per hour of either corn or barley.

How to Prepare for Cutting

Alfalfa, corn or barley must be well cured before cutting. We stack our alfalfa when cured and cut and sack in the fall. We raise barley for hogs, and to avoid expense of threshing we mow when ripe, and cure and stack for fall chopping. The corn is cut with self binder and put up in large shocks, and when well cured is ready for chopping. We prefer to mix the feed while chopping. We drive the loaded wagon up to the cutter, having corn lying crosswise in center of wagon with butts next to cutter for convenience, barley in one end and alfalfa in the other Feeding in this way the corn, barley and alfalfa are ready mixed as it enters the sack after passing through the cutter. We use ordinary grain sacks and these when tied weigh about 35 pounds each.

How to Feed

For horses and cows dampen before feeding. If they do not eat it well at first, mix a little rolled barley or bran with it. They soon learn to like it and it cuts down the feed bill.

For little pigs before and during weaning time where milk is not available, mix chopped feed with ground wheat, middlings or bran, equal parts. As the pigs get older decrease the amount of mill feed.

Always watch very closely to see that the little pigs do not become constipated or great damage will result in a very short time. Watch the little fellows especially and give more bran if need be to keep them in good condition.

We use barrels in which to mix the feed, a barrel for the little fellows with about two buckets of water to one of dry feed. Let soak from 12 to 24 hours, always feeding before it becomes sour.

Sows do well on chopped feed, and it should be mixed in another barrel and soaked. If they are very thin and have large litters it will be well to add a small amount of middlings until they become used to the chopped feed.

THE WORLD'S MILK RECORD

Written for the California Cultivator
By Sacramento Valley Contributor.

Another world's dairy record has been made in California, the Holstein-Friesian cow, Tilly Alcartra, by Alcartra Polkadot Corrector, a son of the great cow, Alcartra Polkadot, having just completed a yearly official test that shows a production of 30,452.6 pounds of milk containing 951.308 pounds of butter fat. This is the largest amount of milk ever produced by one cow in one year. The butter fat record has been exceeded.

Tilly Alcartra is owned by A. W. Morris and sons of Woodland, California. She was bred in Iowa, bought as a heifer and brought to California, was developed and dropped her first calf here. She is five years old. Until now the world's milk record has been held by a Massachusetts cow, Creamelle Vale, with a record of 29,591.2 pounds made in 1912. Previous to that another Morris cow, Aralia De Kol, held the record.

There are but six cows in the world that have produced over 28,000 pounds of milk in one year, and three of these are now in the same herd—Tilly Alcartra, Aralia De Kol and Riverside Sadie De Kol Burke.

There are at least three important factors that enter into the making of a world's dairy record, and it is difficult to tell which is the greatest. These are the cow, the man behind the cow, and the conditions under which the cow and the man are working.

The cow must be a great individual, must have the temperament and the capacity to transform an enormous quantity of feed into milk, and this comes by inheritance from a long line of ancestors with like temperament and capacity.

The man or men who mate and have mated the ancestors of a record cow, who care for and develop her during her early life and her later life, must be great individuals—men who have high ideals of an animal of maximum usefulness and who strive ceaselessly, untiringly and everlastingly toward the ideal. They must be great breeders, they must be great caretakers, for no matter how great the animal, she must have everything in the way of food that she can consume to advantage and every possible condition for her ease and comfort.

And the conditions must either be favorable naturally or be made so artificially. Many dairy establishments in the eastern states, where big records are made in spite of rigorous climatic conditions, are fitted up without regard to expense, so that light and heat and fresh air are under as nearly perfect control as possible. A cow making a big record must not suffer from cold or heat, or insect pests, or hunger, or thirst, or disease. When big records are made in the middle west or eastern states conditions must be made favorable, artificially, during a considerable part of the year. But in California, in the Sacramento and San Joaquin valleys and elsewhere, the natural conditions are such as breeders strive to make artificially elsewhere. An annual average temperature of around 60 degrees, with no zero weather, with comparatively few days of intense heat, and wth long periods of days of even temperature, not too hot, so as to be enervating; cool enough night and morning to be invigorating, but not cooler than that—nothing could be more ideal than this. Couple with this favorable weather condition a rich soil and plenty of irrigation water to make an abundance of rich alfalfa, corn, silage and grain, and it makes a dairy cow's paradise. Thoughtful students of the situation have long predicted that these rich lands of California would some day be the home of the greatest dairy cattle in the world. The prediction has now come true.

Such a combination of factors—cattle, men, conditions—have made, are making and will continue to make world's records and world's record dairy history.

PROPER USE OF "THOROUGHBRED"

The more common of the terms used to indicate lineage are thoroughbred, pure-bred, cross-bred, grade and scrub. Thoroughbred in its strictest term means the English race horse. This was the original use of the word. The term pure-bred is used synonymous with full-blood. It indicates animals of well-defined breeding without admixture of other blood. In speaking of pedigreed Shorthorns, for instance, one should not say, "thoroughbred," but pure-bred.

If you want to start an argument around horse fanciers, just call a Percheron stallion, a Jersey bull or a Leghorn cock a "thoroughbred."

Economic milk production can only come from cows of large capacity that are well fed.

THE KEARNEY RANCH

(Continued from Page 579.)

mediately in charge of this enterprise, had definite and concrete recommendations to make.

In order for you to understand the situation fully I must briefly describe the present resources and activities of your college of agriculture and experiment station. The college of agriculture of the University of California is not located at Berkeley. It is located in California. It has now eight properties scattered about the state where the work of the college and station is conducted. It has placed farm advisers in nine counties.

At Berkeley its activities may be divided into four types: Research, post-graduate instruction, under graduate instruction and external instruction or extension work. Under this latter heading, may be mentioned our correspondence instruction in agriculture. The first correspondence lesson in agriculture was mailed from Berkeley on September 20, last year. There are now 10,700 persons registered in these courses. Through other extension activities it is estimated that we come in contact with 20,000 people, although I am not sure but that we count some people twice in making this estimate. At any rate our staff write more than 50,000 letters annually, largely in answer to inquiries, and we mail 500,000 circulars, bulletins and reports of our experimental work. There are between five and six hundred students studying agriculture at Berkeley. Walk across the Berkeley campus. Ask any young man you meet. One in six will tell you he is studying agriculture.

At the university farm at Davis, there are also at least four types of work. There are experiments with animals, including poultry, dairying, field crops, deciduous tree fruits and grapes. For example there are 500 varieties of grapes under test. There is conducted at the university farm a school for students who have reached college age but do not have the requirements for admission to the university, or for any others who may desire this type of instruction. There are conducted, as provided by law, short courses in various branches of agriculture. These begin this year on October 5 and continue six weeks. The fourth activity is instruction given during the second semester to university students who come from Berkeley for this purpose.

The first semester last year the attendance at the university farm school was 188. Already this semester the enrollment has reached 253, or an increase of 35 per cent. The normal increase of a state institution of learning is 15 per cent.

Last year at this time there were 47 applications for short courses. The applications this year have reached 99. Last year 61 university students received instruction at Davis. Not counting the same students twice it is probable that resident instruction in agriculture will be given to approximately 1,000 students at Berkeley and Davis while, as before stated, correspondence instruction is being given to over 10,000 persons. I will not stop to sketch the work at Riverside, Whittier and Imperial Valley. I will only state that each is a part of the greater whole.

A number of suggestions have been made concerning the way in which Kearney ranch may eventually contribute to the work of the college of agriculture. One suggestion has been that the net income from this ranch might be set aside for the study of some definite problem like tuberculosis. My own thought at first was that when the university farm at Davis had been developed to such a size as to be most economically administered then another unit along similar lines should be started at the Kearney ranch. At the Davis farm the emphasis would be placed upon livestock husbandry while at Kearney emphasis would be upon fruits and field crops.

However, as I have studied the situation further I have come to feel that a much greater service can be rendered to the state by establishing a school that shall be quite different from anything that has ever been undertaken — an institution which from its intrinsic value and uniqueness would attract the attention of the educational world. The institution such as I have in mind will not be a cheap institution in any sense of the word. If it is successful as I think it will be it is destined to revolutionize our ideas of education in general.

It costs not less than $120,000 annually to conduct the university farm at Davis. In addition the last legislature appropriated $135,000 for buildings. A lesser program would not be satisfactory for Kearney.

A great deal of study has been given to this problem. Among other things I have found, it is desirable to examine into the finance of the Kearney ranch to determine how far the profits might be applicable to the support of any enterprise which it may be finally determined as best for this location. You may be interested in this aspect of the matter. The comptroller of the university has furnished me the following figures:

Total profits of Kearney vineyards May 1, 1906 to June 30, 1914	$257,000
Estimated profits July 1, to June 30, 1915	30,000
Total	$287,000
Payment of mortgage and bonded indebtedness	$172,000
Total capital improvements including drainage experiment	35,000
Paid to the support and maintenance of the department of agriculture of the University of California for two years beginning July 1, 1913, and ending June 30, 1915, at the rate of $40,000 a year	80,000
Total	$287,000

It will thus be seen that the cost of conducting a suitable institution such as we want to see established at Kearney will require many times its present income.

STATE BEEKEEPERS' CONVENTION

The State Beekeepers' convention, which was to have been held in Los Angeles this week, has been postponed because of inability to get the use of the rooms of the Y. M. C. A. until December 16. On that morning the State Beekeepers' convention will be called together, and the sessions will continue through the 16th, 17th and 18th. Secretary Schaffner informs us that a good program has been arranged. Dr. A. J. Cook, state horticultural commissioner, will be present and will make an address. The convention will give general attention to matters of legislation which are of particular interest at this time, because of the nearness of the next session of the state legislature. There will be many addresses by practical beekeepers, and presumably a banquet will be one of the features of the convention.

Ventura County shipped 40 cars of beans during November.

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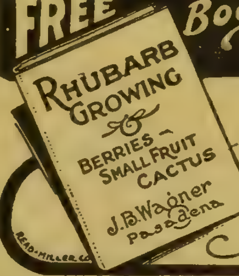

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EXPOSITIONS
at San Francisco and San Diego will
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There will be
NO POSTPONEMENT
on account of the European War
or for any other reason

Ask each of them to mail a Postal to Some One Else, and the
Mail Man will spread the news

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Panama-Pacific International Exposition at San Francisco
February 20 to December 4, 1915
Panama-California Exposition at San Diego
January 1 to December 31, 1915

Here are some convincing facts concerning the great
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Not one of the 42 exhibiting foreign nations has withdrawn, while three of them have increased their participation.

Seven nations involved in war and five neutral European nations will have their own buildings.

Exhibits from eleven foreign countries have already arrived.

Forty-three of our States and one city are making individual exhibits.

Finally, these exhibitors are spending more money than previously expended in any two other Expositions.

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115½ North Broadway, Los Angeles

Poultry for Profit

PASADENA POULTRY SHOW

Written for California Cultivator
By Frank J. Ironmonger

THE Pasadena Poultry, Pigeon and Pet Stock Association held its fourth annual exhibition December first to fifth with the usual pomp and splendor characteristic of Pasadena, the home of the millionaires.

The weather was ideal and the many chicken lovers were out to witness the display of fine feathers. The room in which the exhibition was held failed to meet the requirements of the association, but it was the best they could do The aisles were the same old story—too narrow for comfort, the light very poor and the darkest colored birds, that should have had the better light, were tucked away in dark places, a disappointing feature that is impossible to overcome where a poorly lighted room must be taken.

The officers, J. D. Nash, president; J H. Thompson, vice-president; J. H. Jones, treasurer, and M. D. Courtwright, secretary, are old time poultry fanciers and certainly understand pulling out a fine display of quality stock.

The classes were well filled with birds above the average usually seen in poultry shows, which made up for the deficiency in numbers. The poultry numbered 567 head, 176 of which were bantams and the five turkeys, two geese and nine ducks were not to be overlooked.

The judging was in the hands of W. S. Russell of Ottawa, Iowa, who is known by every poultry fancier from Maine to California, and when an exhibitor is honored with a score card bearing his signature they know it is correct. Mr. Russell has arranged his circuit this year so that he will handle a number of California's largest shows, and poultry raisers should make a strong effort to exhibit under him in order to know exactly and honestly what place their birds hold in the poultry world.

The standard varieties were judged by the score card system, while the non-standard varieties and bantams were judged by comparison. In passing through the aisles the experienced eye could plainly see that the association motto, viz, "Let the best bird win, no matter to whom it belongs," had been carried out to the letter. Each score card was tacked to the coop containing the bird scored, which was a great help to the public.

The bantams were a grand lot; the Black Cochins carrying off the honors for numbers. The Game Bantams came next, followed closely by the Sebrights. The bantams were passed on by Dr. Irwin C. Royce in the absence of Dr. Enos of Long Beach.

The association was very liberal in the cash premiums, offering $2.50 for first, $1.50 for second, $1.00 for third on single birds; $8.00 for first, $6.00 for second, $2.00 for third on exhibition pens. For Bantams, $1.25 for first, 75 cents for second, 50 cents for third on single birds; $4.00 for first, $3.00 for second, $1.00 for third on exhibition pens—eight to fill in each case.

Besides the regular ribbons by the association there were 11 silver cups, five gold coins, one incubator and 33 premiums from an umbrella to a year's subscription to some paper placed on the sweepsteak winners. On the Bantams there were 10 cups offered. The cash prizes and cups were big inducements for a large exhibit, especially for the novice who above all others should be encouraged. They are the life of the trade.

The pigeon display under the management of the Pasadena Pigeon Club, together with the rabbits, was staged in the second story of the building. Here the light was all that could be asked for and the specimens showed up in excellent shape.

The Pigeon Club has the honor of having the largest entry of pigeons ever recorded, numbering 750 birds. The Runts were the largest class, numbering 287, being 159 more than the world's record display of 128. The utility varieties were much stronger in numbers than in former shows where the fancy varieties were the main feature. The exhibitors report quite a number of sales ranging in price from $25 to $50 a specimen. Among the winners were birds imported from England and other countries. Mr. R. W. Wales of Iowa City, Iowa, and Mr. C. E. Lang of Buffalo, New York, judged the ornamental varieties, while Mr. R. V. Moore of Los Angeles judged the utility varieties. In addition to the liberal cash prizes and ribbons offered there were seven cups and trophies.

The rabbit display reminded one of the old-time days in California when Belgian hares and oil stock were all the go. The cages were full of fine specimens consisting of Belgian, Flemish Giants and New Zealand Reds.

Rabbits are fast gaining favor on the coast not merely as a fancy but principally as a source of fresh meat, and the prediction is that before very long a majority of families who are in a position to raise meat for their table will turn their attention to the quick maturing, economical and fast breeding Belgian hare.

All the rabbits were judged by Mr. R. V. Moore of Los Angeles, who is recognized as the best authority the coast has known. Several silver cups and special ribbons were offered, which brought out the 189 rabbits of quality.

Following is a list of the awards:

AMERICAN CLASS

White Rocks—J. H. Stearn, 1st ck, 1st and 2nd hen; George E. Richardson, 1st and 2nd ckl.

Barred Rocks—J. D. Nash, 1st ck, 3rd hen; Fred Espe, 1st hen, 1st pullet; Frank Wagner, 2nd hen, 2nd and 4th pullet, 1st, 2nd and 4th ckl.; Edwards, 2nd ck.; Vance, 3rd ckl.; McPherson, 3rd pullet; Mitchell, 5th pullet; E. E. Webster, 4th pen.

Partridge Rocks—Dr. Duncan, 1st hen, 1st pullet; J. E. Nash, 2nd hen; H. D. Armstrong, 1st ckl, 2nd pullet; Dr. Royce, 2nd ckl.; Dr. Duncan, 1st pen.

Buff Rocks—Kellenberger, 1st ck.; Mrs. Fred Morgan, 2nd and 3rd ck., 1st, 2nd, 3rd, 4th and 5th hen, 3rd ckl., and 1st, 3rd and 4th pullet; A. F. Carlton, 4th ck.; L. M. Colby, 2nd and 5th pullet; Fred Morgan, 1st pen.

White Wyandottes—B. B. Baer, 1st ck.; M. D. Cartwright, 1st and 3rd hen, 1st and 2nd pullet; W. F. Smith, 2nd hen, 1st ckl.; McLuckie, 4th hen; Z. E. Durham, 4th ckl.; J. E. Klepper, 2nd and 5th ckl., 3rd, 4th and 5th pullet.

Buff Wyandottes—Mrs. W. O. Johnson, 1st ck., 1st hen, 2nd ckl., 2nd and

3rd pullet, 1st pen; E. C. Irwin, 1st hen, 1st pullet.

Partridge Wyandottes—E. M. Moore, 1st cock, 4th pullet; Henry L. Edwards, 2nd and 3rd hen.

Silver Penciled Wyandottes—Mrs. Lyle, 1st hen, 3rd ckl.; pen.

Black Wyandottes—Ralph White, 2nd ck.; J. P. Middleton, 1st hen, 1st pullet.

Single Comb Reds—J. L. Harrison, 1st ck., 2nd ckl., 4th hen, 3rd pullet; S. E. Coonf, 2nd ck, 3rd hen, 4th pullet, 2nd and 4th pen; V. R. Long, 5th ck, 4th ckl., 2nd and 5th hen, 1st and 2nd pullet, 1st pen; J. H. Thompson, 4th ck.; Fowler & Masterson, 3rd ck., 1st and 3rd ckl., 1st hen, 5th pen; L. H. Schumonger, 3rd pen; Oscar Nield, 5th pullet.

Rose Comb Reds—Mrs. Krum, 1st ckl.

MEDITERRANEAN CLASS

Brown Leghorns—George Kehn, 1st hen, 2nd pullet; S. O. Lance, 3rd ckl.

White Leghorns—Charles G. Weaver, 4th ckl., 2nd pen; J. H. Howe, 3rd and 4th pullet, 5th ckl.; Mrs. E. B. Martin, 1st and 2nd ck, 1st, 2nd and 3rd ckl., 1st and 2nd hen, 1st and 2nd pullet, 1st pen.

Buff Leghorns—W. B. Kearney, 1st ck., 2nd ckl., 1st pen; A. C. French, 1st ckl, 2nd pullet; Oscar Nields, 1st pullet.

S. C. Black Minorca—A. C. Donaldson, 1st ck., 1st hen, 1st and 2nd ckl., first pullet, 1st pen.

Black Spanish—R. A. Rowan, 1st and 2nd ck., 1st and 2nd hen, 1st and 2nd ckl., 1st and 2nd pullet.

Anconas—A. G. Goodacre, 1st hen.

ENGLISH CLASS

Black Orpingtons—Francis Fletcher, 1st ck., 1st hen, 1st ckl., 1st and 2nd pullet, 1st pen.

Buff Orpingtons—Ferris' Poultry Ranch, 1st and 3rd ck., 1st and 2nd pullet; A. G. Goodacre, 2nd ck, 1st hen; Mrs. Doves, 3rd, 4th and 5th ckl., 3rd pen; Mrs. Susan Swaysgood, 1st pen; Charles D. Stearns, 2nd pen.

White Orpingtons—L. M. Armstrong, 1st hen; Mrs. Susan Swaysgood, 1st pen.

Brown Sussex—C. K. Barker, 1st ckl.

Special Sussex—N. G. Barker, 1st and 2nd ckl, 1st, 2nd and 3rd pullet; C. K. Barker, 1st cock.

Red Sussex—Frank Moore, 1st pullet, 4th hen, 1st ck.

DUTCH CLASS

Silver Spangled Hamburg—1st ck., 1st ckl., R. A. Rowan.

ASIATIC CLASS

Light Brahmas—Richards & Stein, 1st and 2nd pen.

Langshans—J. B. Baer, 2nd ck, 2nd hen; J. M. Wright, 1st ck, 1st hen, 2nd ckl., 1st pullet; Mrs. R. W. Beets, 1st ckl., 2nd pullet.

POLISH CLASS

Silver Polish—R. A. Rowan, 1st and 2nd hen, 1st and 2nd pullet.

Golden Polish—R. A. Rowan, 1st ck, 1st and 2nd hen, 1st and 2nd pullet.

FRENCH CLASS

Houdans—Mrs. H. I. Johnson, 1st ck., 1st, 2nd, 3rd, 4th and 5th hens; 1st and 3rd ckl., 1st, 2nd, 3rd, 4th and 5th pullet; Charles Carlson, 1st ckl. and 1st pullet.

La Fleches—George Woolet, 1st ck., 1st hen.

ORIENTAL CLASS

Dark Cornish—F. D. Terry, 4th ck.; Henry L. Edwards, 5th hen, 5th pullet; C. S. Smith, 3rd and 4th pullet; G. B. Livingston, 2nd pullet; J. D. Mercer, 1st, 2nd, 3rd and 5th ck.

GAME CLASS

White Pit Games—H Loudermilk, 1st ck., 1st and 2nd hen.

TURKEYS

Bronze Turkey—Charles G. Weaver, 1st adult male, 1st young male, 1st old female and 1st young female; M. Ayre, 2nd young male.

DUCKS

Buff Orpington Ducks—Ferris Poultry Ranch, 1st young drake, 1st young duck.

Colored Muscovy Ducks—J. H. Stearns, 1st drake, 1st duck.

White Muscovy Ducks—A. G. Baer, 1st drake, 1st duck, 1st young drake, 1st young duck.

GEESE

Toulouse Geese—C. M. F. Stone, 1st gander, 1st goose.

BANTAM CLASS

Silver Duck-Winged Game—R. A. Rowan, 1st ck., 1st and 2nd hen, 1st pullet.

MISCELLANEOUS

Golden Campines—H. D. Pares, 1st ckl., 1st pullet.

SPECIALS

Highest scoring cock—John D. Mercer.

Highest scoring cockerel—H. D. Armstrong.

Highest scoring hen—R. A. Rowan.

Highest scoring pullet, highest scoring hen—Mrs. E. B. Martin.

Ten highest scoring birds—Mrs. Fred Morgan.

Ten highest scoring birds, English class—Miss Frances Fletcher.

Ten highest scoring birds, Asiatic class—Richard & Steen.

Ten highest scoring birds, Mediterranean class—Mrs. E. B. Martin.

Best display, Oriental class—John D. Mercer.

Best display, French class—Mrs. I. N. Johnson.

Best display, Polish class—R. A. Rowan.

Best display, Water Fowl—A. G. Baer.

Best display, Turkeys—Charles E. G. Weaver.

SWEEPSTAKE MEDALS

Buff Rocks—Mrs. Fred Morgan.

S. C. Rhode Island Reds—E. R. Long.

Buff Wyandottes—Mrs. W. O. Johnson.

Silver Penciled Wyandottes—Mrs. Lyle.

White Leghorns—Mrs. E. B. Martin.

Black Minorcas—A. C. Donaldson.

Black Orpingtons—Miss Frances Fletcher.

Houdans—Mrs. I. M. Johnson.

Dark Cornish—John D. Mercer.

Best display of pure bred poultry by a novice—Mr. I. N. Johnson.

Silver cup, best exhibit of non-standard varieties—N. G. Parker.

Best black bird, highest scoring black bird—R. A. Rowan.

Best Ancona—A. G. Goodacre.

Best S. C. Red cockerel—Fowler & Masterson.

Best White Wyandotte cockerel—W. F. Smith.

Best Black Langshan cockerel—R. W. Beets.

Best White Wyandotte cockerel—W. O. Johnson.

Best Partridge Rock cockerel—H. D. Armstrong.

Best Buff Rock cockerel—Fred Morgan.

Best Barred Rock cockerel—Frank Wagner.

Best White Rock cockerel—George D. Richardson.

Best Black Orpington cockerel—Francis Fletcher.

Best Houdan cockerel—Mrs. I. M. Johnson.

Best Buff Leghorn Cockerel—Mrs. E. B. Martin.

Best Minorca cockerel—H. E. Donaldson.

Best Cornish cockerel—John D. Mercer.

Highest scoring white female, best bird exhibited by a lady—Mrs. E. B. Martin.

Best Turkey—George W. Weaver.

Best Goose—C. M. F. Stone.

Silver cup for the largest exhibit, silver cup for best exhibit, silver cup for best exhibit Game Bantams—R. A. Rowan.

Silver cup for best exhibit Seabrights—N. Garwood.

Silver cup for best exhibit of Rose Combs—Alice McAdams.

Silver cup for best Black Cochins—Thott & Andrews.

Silver cup for best exhibit of White Cochin Bantams—Fred Bunke.

Silver cup for best exhibit of Polish—R. A. Rowan.

Silver cup for best exhibit of Cornish—Joe Doldshal.

Silver cup for best exhibit of non-standard varieties—Joe Vance.

Silver cup for best exhibit of Buff Cochin Bantams—Mrs. Ardyce.

Silver cup for best Sebright Bantams—Earl Klepper.

Silver cup for smallest—C. M. F. Stone.

Silver cup for best Bantam in show—Miss Alice McAdams.

Medals given best Black Cochin

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A large shipment of 2-point galvanized barb wire, slightly water stained in shipping, otherwise in perfect condition. 80 rods to the reel. Light wire special at, PER ROLL $1.75
Special heavy galvanized "Waukegan" barb wire, 80 rods to reel, weighing 100 to 115 lbs., only $2.75 per 100.

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Look at this! Corrugated galvanized iron, 2-inch corrugations, from 6 ft. to 8 ft. long. This is in perfect condition nad won't last long at our special price of only $3.55 per hundred square feet.

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Three-ply moisture-proof fiber, laid in asphalt or cream white fiber Wall Board—your choice of either for only $19.00 per M sq. ft. This is a genuine $30.00 value for $19.00. Wall Board does not crack, simple to apply. Takes the place of lath and plaster. Very economical. Used in any building.
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Two-light double hung windows 1⅜ in. thick, best quality American windo wglass, all sizes, 60c
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Medal for best Black Cochin Bantam shown by novice—Truman Johnson.

POULTRY NOTES

A London remedy for roup is about three drops of camphor on a piece of bread.

A fair hatch of strong, healthy chicks is to be preferred to a greater number of weak ones.

Some tell the sex of a guinea fowl by its wattles. Those of the male are double the size of the female.

Plant sunflowers along the edges of the poultry yards for shade in summer and feed in fall and winter.

A head louse on a chick is easy to find, but it takes a sharp eye to locate the mites. Keep after them.

A gentle mother makes gentle chicks. When the mother hen is wild and flighty it is hard to tame her young.

Breed every year from the strongest, best developed fowls and especially from those of good laying qualities.

Never grease the hen that is setting, as grease getting on the shells of the eggs will close the pores and smother the chickens.

Be careful about feeding cornmeal wet up. It is all right as a change as the chick grows, but not as a steady diet—too heating and constipating.

Nature provides food for the chicks the first 48 hours of their lives. Some poultry keepers supplement this with some fine grit and fresh water.

Make the nests big enough so the hens can get in and out without breaking the eggs. Make the entrance to the nests from the back to make them dark.

Do not forget that in the composition of an egg there is a great proportion of water, and the laying hen can not produce eggs unless she has all the water she wants, and at the time she wants it.

Cull the flock closely. Keep the best and prepare the rest for market.

Enrich the garden plot with the poultry droppings.

Constant thought and judgment are necessary in poultry raising.—Western Farmer.

Do not slay the hen that laid the golden egg nor withhold feed from the hen that lays eggs worth 50 cents a dozen.

No man who does not like a hen, who cannot see beauty or excellence in a hen, and who feels like kicking her or shooing her away whenever she comes near, will ever succeed as a poultryman.

Another year's egg laying test began November 1 at the Missouri Experiment station at Mountain View. The tests at this station are watched with interest by poultry people all over the world.

NOT YET DETERMINED.

"What's that new structure you have put up on the hill there?"

"Well," replied Farmer Corntossel, "if I rent it, it's a bungalow. If I don't, it's a barn."—Washington Star.

Money Making Little Liners

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For Sale—10000 VALENCIA LATE
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8000 EUREKA LEMONS
12000 WASHINGTON NAVELS
Softland trees, perfect in quality, grown by us. Lowest price. Will plant if desired. Consider some exchange—now is most favorable time to make contract for next spring planting. Write or phone today for prices. Phone 559. Ward Realty Co., San Dimas, Cal.

We Have Made a Specialty of Placentia Perfection Walnuts on native black root for a number of years, and are offering the finest trees we have ever grown this year. 80 per cent of our stock is eight feet and up. The scions used were taken from trees in our large orchard that have made a very high record for the past five years. Good Ancestry Pays. Nursery at Villa Park. Hugh T. Thomson, Orange, Cal., R. F. D. 1.

Grafted Franquette Walnuts—Our nuts bring $100 more per ton than the best Santa Barbara seedlings and our Royal root grows 50 per cent faster than the average California root. It took us ten years to develop this combination. It is at your immediate disposal. Write us for number you need. Catalogue and price on application. Imperial Walnut Nurseries, R. D. 7, San Jose, Cal.

Walnut Trees—Late blight resisting varieties grafted and budded on California Black and on FIRST GENERATION Royal and Paradox Hybrid roots, which are as much superior to the California Black root, as the California Black Root is to the English root—Eureka, Franquette, Mayette, Neff's Prolific, Concord and Placentia. Dr. W. W. Fitzgerald, Elks' Building, Stockton, Cal.

Home-Grown Fruit Trees—Largest assortment, including thousands of Royal Apricots, Tuscan and Phillips Cling Peaches, Pears, Apples, Figs, Grapes, etc., etc. Guaranteed true to name, vigorous, healthy and well rooted. Low prices. Send us your list of wants for special quotations. Inspection of Nurseries cordially invited. Orange County Nursery & Land Co., Fullerton, Cal.

For Sale—Mission Olives; will be two years old next March. To be absolutely sure of getting Missions I only propagate from my own trees, raised by me thirty years ago. Also cuttings from same trees for sale. W. A. Hayne, Marysville, Cal., Box 461.

For Sale—At Corning, 4,000 Mission Olive trees from three to seven feet in height. Cuttings selected from the best producing orchards at Corning. Trees mostly two years old in March. Address Midland Counties Land & Irrigation Co., First National Bank Bldg., San Francisco.

Now is the Time to book your order for fig trees. "My Specialty." 25,000, seventeen varieties. Extra fine. Well rooted, straight and branched, one and two year old trees. Price list on application. C. C. Terbush, R.F.D. 2, Box 543, San Gabriel, Cal.

Grafted Walnut Trees on Northern California Black Root. Special price, must be moved. Placentia Perfection, Chase, Eureka, Mayette, El Monte Large, etc. Both phones 6971, Whittier Nursery, 803 West Philadelphia St., Whittier, Cal.

The Walnut Nursery has a fine lot of grafted walnut trees again this season, Chase, Eureka, Mayette and Placentia Perfection. Order now and get the best. W. A. Litten, Prop., R. F. D. No. 2, Whittier, Cal. Home phone 7863.

Walnut Trees—Eureka and El Monte varieties a specialty, also Franquette and Placentia. Write for prices and description of stock. Personal inspection invited. Eureka Walnut Nursery, Montebello, Cal.

Potrero Heights Walnut Nursery—Placentia Perfection Walnuts a specialty. Native Black Walnut roots. Get my prices and order early. Address A. H. Jessup, San Gabriel, Cal., Route 2.

The 1200-Acre Nursery, growers of 1500 varieties of trees and plants. OREGON NURSERY CO., Orenco, Oregon. Sales office, 522 Chamber Commerce, Los Angeles, Cal.

Budded Avocados in all the leading varieties, also Feijoas, Guavas, and Mangoes. Write for prices. Edgemont Avocado Nursery, R.F.D. 2, Box 213, Pasadena, Cal.

Franquette and Mayette grafted on Northern California Black, 3 to 10 feet. Prices right. Special discount on large orders. Sunset Nursery, 525 W. San Carlos St., San Jose, Cal.

Fine Placentia Perfection Walnut Trees, grafted on Native Black. Also late Valencia and Eureka Lemon trees. Prices reasonable. Write for prices. Perry Lewis, Box D, Tustin, Cal.

Fig Trees—2000 Calimyrna (Smyrna) and Caprifig trees for sale. Make offer for one or all. Strong, well grown stock. W. F. Lowe, Roberts P. O., Cal.

Mission Olive and Eureka Lemon trees for immediate planting. Write for special prices. A. C. Wisegarver, San Fernando, Cal.

Apricot and Olive Trees—Royal and Tilton Apricots. Mission, Ascolano, Chemlady olives. Choice stock. Correspondence solicited. C. E. Moyer, Hemet, Cal.

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Olives Our Specialty—Find where dead trees came from, then try ours. They live and bear fruit. Best quality, low prices. Exeter Nurseries, Exeter, Cal.

TREES

Avocado Trees—We have extra fine "HARMAN" budded Avocado trees now ready for delivery, and are booking orders for Spring planting. Special prices on application. Write for our new literature just issued. STEARNS & HARMAN, 317 Consolidated Realty Bldg., Los Angeles, Cal.

For Sale—2000 Late Valencia Orange trees, two years from bud. 1800 Washington Navel, one year from bud. A1 stock. Address, H. H. Eshelman, Soldiers' Home, Cal.

Walnut Trees, Wilson Wonder, Franquette—Budded on Northern Black Walnut root. Eucalyptus trees in large quantities. Prices right. Ekstein Nurseries, Modesto, Cal.

For Sale—Excellent citrus trees, Valencia 1600, Navel 1500, Eureka lemons 2400, ⅝ up. Price loose, 15c; baled, 23c F.O.B. Budded with fruit buds after freeze. Address B. C. Dodson, Glendora, Cal.

For Sale—Grafted walnuts on black and soft root, oranges, lemons, apricots, peaches, everything in the nursery line. Get my prices. A. R. Marshall's Nurseries, Box 64, Santa Ana, Cal.

Royal and Tilton Apricots, Phillips and Tuscan Cling Peaches, 5 to 8 feet, $20 per 100; $180 per 1000. K. B. Utigaard, Hemet, Cal.

Budded Citrus Trees and seedlings at fair prices. Will take auto or land. Butler's **Morning Side Nursery, P. O. Box 15, Lamanda Park, Cal.**

Citrus Nurseries, Murphy Oil Company, East Whittier, California. Selected stock for sale; inspection invited.

POULTRY

How to Make Money—Mrs. A. Basley's latest Poultry Book is without exception the best ever written. The secret of how to raise every turkey hatched and the "Basley Formulas," now published for the first time, are worth many times the price of the book. The "Western Poultry Book" is a practical book by a practical woman. Price, $1. Order from Cultivator Publishing Co.

Macfarland Strain White Leghorn eggs $5 per 100, chicks, Jan., Feb., $12, afterward $10, order now, any quantity. Cockerels $2. White Rock eggs, chicks, cockerels; write for prices. Big plant, best stock, lowest prices. Newton Poultry Farm, Dept. 3, Los Gatos, Cal. N. B.—See article about us by Prof. Adams, U. C., in October Poultrycraft.

White Leghorn baby chicks from McFarland Strain, from two years old hens; there is no better laying strain than this. You cannot succeed in the poultry business with poor stock. I guarantee safe arrival by express. My specialty is pleasing my customers. Chicks $10.00 per 100. Book your order for Spring delivery now. $2.00 per hundred with the order. J. W. Lyon, Gardena, Los Angeles Co., Cal.

S. C. White Leghorn Baby Chicks—From my pure-bred flocks S. C. White Leghorns, carefully selected for laying and Standard qualities, $9.00 per 100, $85.00 per 1000. A first class chick at a reasonable price. Eggs for hatching, $5.00 per 100, $45.00 per 1000. Correspondence solicited. J. R. Heinrich Poultry Yards, Arroyo Grande, Cal.

Prize Strain Buff Minorcas—Our pen took first prize at the 1914 Sacramento Poultry Show. Pens, cocks, cockerels and hens still on sale. Also settings. We took two firsts on Fawn and White Runners. Best drake and best duck in strong competition. A few choice birds yet for sale. Eggs after December. Cedarhurst Ranches, R. D. 2, Sacramento, Cal.

Poultry Wanted—We pay the highest market price for all the local poultry we can get, no matter how large the quantity; also fresh ranch eggs. We remit immediately. National Poultry Co., successors to Allaway & Layton Co., 607 E. Third St., Los Angeles, Cal.

Pullets—Thoroughbred stock—Golden Buff Leghorns—Sheppard's strain Ancona—White Leghorn—White Minorca hens—baby chicks and eggs. Prices reasonable. Sand Ridge Hatchery, Kerman, Cal.

For Sale—16 to 17 dozen Rhode Island Reds and Barred Plymouth Rock Pullets, 5 and 6 months old; also few cockerels same age. Inquire Geo. A. Sill, Watsonville, Cal.

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Barred Rock Cockerels—(Hawkins Royal Blue Strain) ready for mating, also Barred Rock, R. I. Red, Buff and White Orpington day-old chicks every week. Enoch Crews, Santa Cruz, Cal.

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For Sale—
One Partridge Wyandotte Rooster, $2.50.
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Nothing but immunized stock sent out. Extra fine lot of fall pigs, both sexes, ready for shipment during December and January. Three herd boars used. All stock crated and registered. Make reservations now. C. B. Cunningham, Mills, Sacramento Co., Cal.

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Thoroughbred Berkshire Boars of all ages from developed and large-boned hogs Riccomi Bros., Mountain View, Cal.

Glenview Poland China—Stock for sale Chas. R. Hanna, R. F. D. No. 3, Riverside, Cal.

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Some new at real sacrifice, till January 1st, to clean up. New Galvanized tanks, save 30 per cent and freight, 1000-gallons, $19.50; 2000, $29.50. Engines, 25 per cent of first price. 18 H. P. engine pump, 50,000 gallons, tank cost $1800, all for $400; sell part; 3 H. P., $50; new 4, $58; 5, $95; 12 horse, $125. Holt steam tractor combined harvester, 24 disc cultivator, on cars, $790. Cost $6000. Trade for auto, real estate, what? Our material absolutely best serviceable material can be produced for. Pioneers in our line. Call, write Demmitt Company, office 120 N. Main street, 15191, Broadway 1984.

Distillate and Oil Engines—Pumping machinery of every description, spraying outfits, pulleys, belting, etc. We also have some used engines and pumps which have been put in first-class condition, which we can sell at a great reduction. The money saving Lawter Tractor is specially designed for heavy field subsoil plowing at one-half the expense with horses. Write for literature. Wm Gregory, 602 N. Main street, Los Angeles, Cal.

Special Sale—Implements, Wagons, Vehicles, Harness, Dairy Supplies, etc Right now when so many are buying their new tools for this season comes this splendid opportunity (preparatory t moving into our own new warehouse now building) to get high quality goods o most approved design, at valuable saving Get our special sale circular. It will pay you to buy now for your full year's needs Office and salesroom remain at preser location. NEWELL MATHEWS CO Established 1886. 200 N. Los Angeles St Los Angeles, Cal.

Gas engines, centrifugal and deep wel pumps, motors, and everything pertaining to irrigation, for sale and exchange If you want a complete plant or any par write us; we are experts in irrigation advice and estimates cheerfully giver Will buy, sell or exchange. Reliable an responsible, everything guaranteed a represented. Machinery & Motor Exchange, Inc., 733-735 San Fernando St Los Angeles. Main 6382, F-3433.

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Poor Seeds are dear at any price. Bu why pay high price for the best. W are not in the SEED COMBINE and w don't pay Main Street rent, but our stor is just off Main Street and very handy and we sell Seeds at LOW PRICE an NO PRICE can buy better. Try us. WES COAST SEED HOUSE, 116-118 E. 7th St Los Angeles, Cal.

Strawberry Plants—Gold Dollar, Clar Seedlings, Magoons, Wm. Belt, Marshalls, Goodells, Early Ozark, and new Oregons, $2.50 per thousand. Thoroughbre plants. Mr. John Christiansen, R. F. D. Canby, Oregon.

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Calla Bulblets—To plant half acre f $15.00. Write for sample and particulars. J. Beaman, 633 Soquel Road, Sant Cruz, Cal. Route 2.

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Ducks—High class Mammoth Imperi Pekin Ducks, and Indian Runners f breeders. Also eggs. The best stock California. Stone Canyon Poultry Far P. O. Box 348, Sawtelle, Cal. Sunset Pho 565-M, Santa Monica Exchange.

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For Sale—480 acres Lake Tulare Lands, in Kings County, Cal. No better land in the State. Ditch water right second only to 700 acres. Over 30 sacks barley and over 20 sacks wheat per acre last season on this Lake land; now rented for this next season, the purchaser's share to be delivered at railway warehouse without any expense to him. A good investment for a non-resident. Patent title clear of all incumbrance. The price is only $40.00 per acre, half cash, fourth when next crop is harvested, and fourth two years. Or will sell for $32.00 all cash, and reserve the next crop. Best buy on the market. Or will trade for good dairy ranch between Los Angeles and Fresno. Give particulars of same first letter, location, size, improvements, cash price, incumbrance, if any. T. S. TOMPKINS, Owner, 116 E. 7th St., Los Angeles, Cal.

For Sale—40 acres Blythe, Riverside County. Canal 40 feet wide bordering on north and west side; water right with each acre and plenty of it any day. Can grow wheat and cotton same year or wheat and corn two crops a year. Best of soil; 5 acres in alfalfa, balance in cotton and milo maize. Come and see or write. $150 per acre. W. C. Mayhew, Blythe, Riverside County, Cal.

Mexican Oil—5000 acres; in richest oil belt, adjoining big producing wells, between Tampico and Vera Cruz, sold cheap or exchange for California property. Gold mine for one can wait a year or two—for farming alone worth price asked. No revolutionary troubles in this vicinity. Owner is old and infirm. Address Hacienda Rio Claro, Papantla, Vera Cruz, Mexico.

220 Acre—In frost protected region in Fresno County. Suitable for oranges, lemons, figs, olives, grapes and alfalfa. Water plentiful, electric power available. Cut by spur of Santa Fe, station 1½ miles. L. C. Martin, Fowler, Cal.

Apple Orchards—Large and small, in the only apple producing section in California. The greatest section west of Missouri River. Write for booklet. Geo. W. Sill & Co., Watsonville, Cal.

For Sale—640 acres school land in San Bernardino County, all level land, good well on adjoining land. $1.00 due State. Price $4.00 per acre. Address 262 W. 5th St., Glendale, Cal.

For Sale—800 acres, large and small tracts, Pittsburg County; farming, pasture, oil and gas land. $5 to $25 per acre. Write JOHN CAVANAGH, McAlester, Okla.

Alfalfa and deciduous fruit land of my own. Several sized tracts. $35 to $475 per acre. Address Box 297, Corona, Cal.

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"Smith's Pay the Freight"—To reduce the high cost of living, send for our Wholesale to Consumer Catalogue. Smith's Cash Store, 112 Clay St., San Francisco.

TURKEYS

For Sale—Mammoth White Holland Turkeys. Mature hens and toms. ALSO young stock from five distinct pens, headed by toms from yards of leading breeders of this breed in the state. EGGS IN SEASON. Orders given prompt attention. Prices on application. Address H. McKusick, Box 733, Calexico, Imperial Co., Cal.

Turkeys—Bourbon Red, White (Holland) Mammoth Black. The large, hardy, popular varieties and quick money makers. Fine Xmas presents for lovers of poultry. Order early and get choice selection. Mrs. B. Hocking, Guasti, Cal., winner of firsts and specials, Los Angeles and Sacramento State Fair.

Mammoth Bronze Turkeys—Strong, vigorous, well marked toms and hens from the best blood of prize winning and utility stock. Prices reasonable. Geo. A. Smith, Corcoran, Cal.

Giant Bronze Turkey Toms from prize winning stock; weigh over 20 lbs. at 8 months. Write for prices. Mrs. Nellie Hart, Holtville, Cal.

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We have an unusual proposition to make any young man or woman who is planning better things for the future. You must have business education. You can earn board, room and tuition. Telegraphy, stenography, bookkeeping, English branches. Write now. Mackay Business College, 910 Main St., L. A.

Salesmen—Earn $200 to $4000 a year. NEW combination, 12 tools in one. Sells at sight to contractors, farmers, teamsters, fence builders, threshers, miners. Weighs 24 pounds, lifts 3 tons. Stretches wire, pulls posts, hoists, etc. Chance for men who want honest money making proposition. Harrah Manufacturing Co., Box M, Bloomfield, Ind.

Man Wanted—To a man furnishing a bunch of cows to establish a dairy on my 70-acre alfalfa ranch in the Pomona Valley, I will sell a part or half interest at $350 per acre and let him take charge of the place on cash or share basis. Herbert F. Clark, 31 N. Granada, Alhambra, Cal.

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Wanted—Position as foreman or superintendent of large ranch, fruit ranch preferred, by single man 26 years of age. Have had high school training and am thoroughly posted on up-to-date methods of agriculture and horticulture with lifetime experience on a ranch. Can give best of references as to ability, honesty and character. Address, F. H. K., R.R. 1, Box 102, Fresno, Cal.

Wanted — Young Heifer calves, Jerseys, Holsteins, Guernseys, day old or older. Also young pigs, Berkshires, Poland Chinas, or others, in exchange for spineless cactus. Luther Burbank & Mediterranean Cactus Plantations, San Dimas, Cal., R.F.D. 35A.

Wanted—Dairy ranch in exchange for a good Los Angeles business at inventory $8,000 to $10,000. State location, number of acres, cash value, incumbrance, if any. Address Box 40, Stratford, Cal.

Wanted—Party with $4000 to improve and plant a fruit farm on the coast of Texas. I know how to do it. John W. Dale, Kingsville, Texas.

Wanted—To buy 30 small turkeys for killing purpose, white stock preferred. State price and size. Wm. Hertrich, San Gabriel, Cal.

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For Sale—New Zealand Rabbits. "The best meat producers." A grand bunch of fine, red, half-grown youngsters, 1 buck and 3 does for $5.00. Also mature stock. Your chance to secure a start of this splendid strain at small cost. Shipped anywhere. Standard Rabbitry, Santa Ana, Cal.

New Zealand Reds—16 ribbons this year. Improve your stock with prize winners. Bucks ready for breeding $3.00 to $5.00 each. Mrs. C. A. Richey, R.D. No. 8, Box 557, Los Angeles, Cal.

New Zealand Reds—Scored and sold on merit. Investigate. Our Catalogue is free. Caldwell Bros., Los Angeles, Cal., Box 613

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INDUSTRIAL OPPORTUNITIES

From Address by Geo. Otis Smith, Director Geological Survey

Four constituents enter into the reaction that we term industry. Two of these, brain and brawn, are organic compounds and two are perhaps to be regarded as inorganic—money and material. None of these components is wanting here in the United States and in fact their abundance affords the best reason for an optimistic outlook upon the present industrial situation. Of these four constituents, labor and capital and brains are all more easily transported generally than the crude materials upon large tonnages of which the industry must depend. Thus, cheap coal attracts manufacturers just as cheap land attracts farmers.

With distribution of raw material is linked the influence of markets upon the location of industry. The development of transportation systems makes the problem of markets a most complex one. The industrial independence of the small community of a century ago has given way to the system under which your dinner table may represent the tribute from several continents. Even in a country so diversified as ours in its natural bounties, domestic production of everything consumed is not desirable nor profitable. Exchange of commodities with foreign countries becomes necessary, so it follows that industrial independence is the goal toward which a nation should face, but not a goal which it should have either the intention or desire to attain.

To increase industrial prosperity this country needs to export finished rather than crude products and to import raw materials rather than manufactures. It is the product of American labor rather than the bounty of our natural resources that preferably should go into the world's markets. As the engineers of America study this matter of expansion of manufacturing, it becomes evident that the distribution of raw material and of power is the key to industrial opportunities.

Petroleum and natural gas in their distribution in some degree supplement coal. Thus, the largest oil field, both in present production and probable reserve, is in California, a state with only negligible coal resources. Taken together, these mineral fuels constitute a national asset comparable with the soil resources of this country, but the larger part of the value of the natural gas, petroleum, and coal to the nation is in their relation to manufactures.

The wide distribution of ores of the principal metals sufficiently rich and extensive to be mined in large quantities means that the metallurgical industry is important on both the Pacific and the Atlantic seaboard, in most of the Rocky Mountain states as well as in several of the middle states. Even in the two metals which at once suggest to us centralization—copper and steel—there is widespread production. In the mining of copper last year 23 states contributed, and no less than 28 states furnished iron ores to the furnaces of the country.

The raw material resources of this country are so widely distributed that industry has been developing at this rapid pace at many points. The tendency is away from geographical centralization of industry rather than toward it. A few opportunities for expansion need only to be suggested: The south with its happy combination of coal and iron-ore in the same districts makes pig-iron production possible at minimum cost; the west with its hydro-electric possibilities available as a source of relatively cheap power for chemical and metallurgical industries; the Rocky Mountain region with its vast unutilized sources of sulphuric acid and equally great unmined stores of phosphate rock.

The ingredients necessary for producing prosperity appear at hand. The new financial system already promises more mobile credits. A more sympathetic attitude of the public toward big industrial operations is indicated. The efficiency of American labor and American engineering was never questioned.

In any estimate of American ability to make the most of the present opportunities for industrial expansion, no better measure of the inventive genius of this country can perhaps be found than in a moment's review of what is making the European war so terrible. Strictly neutral may we be, yet from the heights above to the depths below we find American inventions "at the front"—the aeroplane, the magazine rifle and machine gun, the barbed wire, and the submarine and its torpedo. Can not our nation lead as well in fashioning the tools of peace as in designing the machines of war?

WHEPLEY PERSIMMON

An exhibit of particular interest among many others made at the recent State Fruit Growers' Convention in Los Angeles was that of some persimmons grown in Tulare County by Mr. Wm. L. Whepley of Lemon Cove. These persimmons have been given the name of Whepley. The fruit is apparently a seedling of medium size and exceptionally fine quality.

Exhibits of fruit and orchard appliances should be encouraged at these state conventions. In some particulars the exhibits are as educational as are the addresses.

DAIRY STOCK SHOULD BE DEHORNED

Except in the case of cattle that are to be used for exhibition purposes all dairy animals should be dehorned. In the wild state cattle needed horns for protection, but in the present state of domestication horns serve no useful purpose and are a source of considerable annoyance.

On the adult animal the horns may be removed by the use of the saw or clipper. In either case the cut should be close enough to the head to leave a ring of hair on the part that is removed, otherwise there is likely to be a stubby growth of horn appear in the course of a year or two.

The best and least cruel method of removing horns is by means of an application of caustic potash to the horn buttons while the calf is from one to four days old. The hair is carefully clipped from the buttons and the moistened end of a stick of caustic potash is then rubbed on the spot until the skin bleeds slightly. Care should be taken to prevent the liquid caustic from running off the button, but if only a small amount is rubbed on there will be no danger from this source. If the caustic has been properly applied there will be a dent in the skull where the button appeared and no horns will develop.—A. B. Nystrom, Dairy Husbandman, Washington Agricultural College.

YOUTH'S COMPANION CALENDAR

The publishers of The Youth's Companion will, as always at this season, present to every subscriber whose subscription is paid for 1915, a calendar for the new year. The decorative mounting is rich, but the main purpose has been to produce a calendar that is useful, and that purpose has been achieved. Subscriptions received at the Cultivator office.

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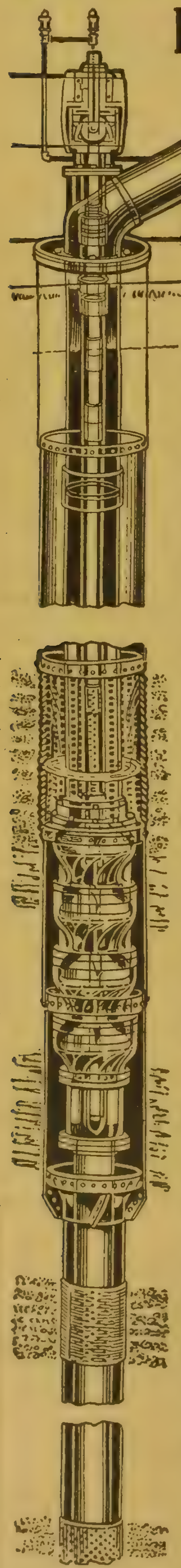

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Questions and Answers

THE EDITOR AND STAFF

Rabbit's Age

How can I tell the age of a rabbit?—Subscriber, Sacramento.

There are no sure methods of telling the age of a rabbit except in old specimens. They usually have such long claws, especially on their hind legs, and their eyes are dim or expressionless, and many of the extremely old specimens are affected with cataracts or styes in their eyes, or are near-sighted.—R. V. M.

Pure-bred Rabbit

How can I tell a pure-bred rabbit?—Subscriber, Sacramento.

Would advise you to seek the services of some friend or rabbit fancier posted on the merits of the breed you are interested in and if such an individual is not available or there is no rabbit show near at hand to exhibit your specimens, would advise you to get a book on standards of the different varieties, published by the Pacific Pet Stock Association, and which is obtainable at this office for 25 cents per copy. This book is illustrated and gives a complete standard of all the popular recognized breeds and is indispensable to anyone breeding rabbits who wishes to follow the standards and points in each breed.—R. V. M.

Apricots on Walnuts

Can apricots be grafted on walnuts?—Subscriber, Campbell.

Hardly. Stone fruits will usually "take" on each other, but the walnut would rebel.

Plow Under Kafir

What effect on soil would plowing under kafir corn stalks have? I am told that as the stalks are somewhat sweet that the process of decay will create too much acid in the soil.—Subscriber, Angiola.

We think there is no trouble whatever from any acid which may be in the stalks. If enough moisture is given to rot down the dryer parts of the matter the soil will be benefited. Orange growers felt at one time that the acid of cull fruit should bar them for use as fertilizers or mulch, but tests showed no ill results from either orange or lemon culls applied to orchards. California soils are usually abundantly supplied with lime, which quickly neutralizes acid formations. Note we say "usually". There are exceptions which an application of limestone or air slacked lime will correct. Plow under the stalks.

Improved Tuscan

There is a party here who is boosting what he calls Southern Tuscan Cling peach trees and claims they are superior to the ordinary Tuscan Cling peach or Northern Tuscans as he calls them. What does the Cultivator know about it? Is it another tree graft or are there two kinds of Tuscans?—Subscriber, Hemet.

We know nothing of the peach referred to. Unless the peach is recommended by good authority, plant sparingly till tested. Have any subscribers tested this peach?

Not True to Name

To what extent is a nursery company liable for damages caused by selling worthless trees or trees not true to name, and how should one proceed when the trees have been shipped in from outside the state and the agent here is not worth anything? Would it make any difference if the land that the trees are planted on has changed hands since the trees were planted?—Subscriber, Hemet.

Only to the extent of the cost paid by the purchaser. However, in case of dishonesty, or extreme carelessness, suit might force a settlement on reasonable terms.

Guinea Fowl Bulletin

If "Subscriber, Calipatria," who asks about guinea fowls in Cultivator of November 26, wishes reliable information regarding them, let him write to department of agriculture, Washington, D. C., for Farmers' Bulletin No. 234, entitled "The Guinea Fowl and Its Use as Food." It is free for the asking.—Levi C. Kincaid, National City.

Bleaching Almonds

How much sulphur is required and how long should it be kept burning under them; should they be dampened with water and will apricot trays do?. Will the same process do for almonds? If I belonged to the Almond Growers' Exchange they would buy my nuts and attend to bleaching, but they handle no nuts outside the organization.—Subscriber, Greenfield.

The same outfit used for bleaching almonds is used for bleaching apricots. Sprinkle the almonds just before placing them in the bleacher. Stir them while sprinkling so as to moisten them on all sides. Place on the trays and sulphur the same as when drying fruit. One hour in the bleacher is time enough.

Sulphuring will not injure the hard and soft shell varieties but it will ruin the flavor of the paper shells. They immediately lose their flavor and soon become soured.

If you could find a market for the kernels it would pay to shell them. We one time marketed a batch of paper shells in that form. We rigged up a home-made sheller by putting a square pole through the ends of a barrel and putting a crank on one end of the pole, making the pole round at two points a few inches from the end of the barrel. The pole made a shaft running through the barrel; it was set on a stand and made to revolve like a churn. A large opening was made in one side of the barrel. This was hinged like a door through which the almonds were put in and taken out.

About a bushel of almonds is put in with a couple of round sticks of wood about five inches in diameter. When this is revolved at moderate speed a few minutes most of the shells will be broken, when the kernels are easily separated with a fanning mill.

The simplest and cheapest way is to join the Almond Growers' Exchange.

Guinea Fowls

The reference in the query department made by our contributor, "J. A. K.," in effect that the effort to boom the guinea fowl has not yet reached California, and that there is no market for the bird, has called forth a mild protest from a subscriber. Mr. C. J. K. Jones of Orange writes: "I am much amused and also filled

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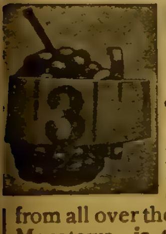

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with sympathy for the unfortunate people who do not know that guinea eggs are the best and most easily digested of all eggs from domestic fowls, and that a six-months-old guinea hen, split on the back and broiled, is the richest and most delicate meat of all poultry. Notwithstanding, each and all and sundry, we are informed that there is no demand for them for the table, and their eggs have no market value. Perhaps not, yes."

Arkansas Black

Please name the apple which I send you.—Subscriber, Santa Ana.

This apple was submitted to a large fruit handler and to a nurseryman, and while neither would be positive because of the fact that apples vary according to the locality in which they are grown, the first guess of each of them was that this was the Arkansas Black.

Pea Fowl

Are there any birds in California called pea fowls or peacocks, or Chinese pheasants? Have never seen them advertised in the Cultivator.—Subscriber, Nestor.

We think Chinese pheasants may be secured of T. D. Morris, Aqua Caliente, or of Kellogg Orange Acres, Bakersfield, Kern Station.

As to pea fowls, there are many of them in California, but we do not now have the names of breeders, unless perhaps the above-named parties, who were, we think, at one time advertising them, may supply you. Would suggest that these breeders, if they care to sell their stock, will probably find a market through the columns of the Cultivator.

Apricot Trees Dying

Many of my three-year-old apricot trees are dying and all show branches dying back. Cutting off these branches shows no beneficial effect. I send a section of one of the branches which shows a peculiar appearance of the center or heart wood with darkened appearance around it. Is this a physical condition caused by soil? There is three feet of good sediment soil, two feet of hard gumbo and underneath, sandy clay. Will dynamite prove beneficial? Satsuma plums adjoining the apricot trees are also showing some gum trouble.—Subscriber, Santa Ana.

As to any fungous trouble, we have the following from Professor Fawcett:

"I did not find any bacterial or fungous trouble on this branch. There is a discoloration of the wood tissue which we have sometimes seen in apricot branches, but sometimes this condition is found even in what seemed to be healthy branches that are not dying back, so I cannot throw any light on the subject from the specimen."

Mr. J. W. Mills advises:

"The apricot branch showing signs of disease indicates sap trouble. The statement that there is a hard subsoil impervious to water close to the surface, in my mind, explains the trouble. Apricot and peach roots will stand in water a long time during cold weather without injury, but if such conditions continue into warm weather a fermentation of the sap will set in and the trees will die.

"We had just such an unpleasant experience years ago in Yuba County. A mixed orchard of peach on peach root, cherries, plums on plum root, and Bartlett pears were planted on ground with a stiff yellow clay subsoil. All varieties flourished till they were about four years old, when heavy rains continued into May. All the peach and cherry trees died after they had blossomed and were half leafed out. The pear and prune trees were not affected, and grew to be thrifty and productive."

Regarding the use of dynamite. If this could be done at a time when the ground is not too full of moisture it might prove beneficial. Drill one-half or two-thirds of the way through the gumbo, making a few tests as to what depth will give best results. The point is to place the dynamite so as to break through the gumbo into the lower stratum of sandy soil. If the dynamite is put below the stratum of heavy soil it is reasonably sure to blow a big pothole in the softer soil. As noted, be careful not to use this process when the soil is wet, for then, instead of shattering and breaking up the hard soil it is more liable to pot-hole and injure it.

Answers in this column by Dr. Wm Petrie, 2714 South Harvard Blvd., Los Angeles, are without charge. For immediate mail answer remit $1.00. In writing questions give full symptoms or particulars of injury of animal

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Hog Cholera Serum

Can hog cholera serum and the needles or syringes for using it be purchased on the Coast? Is it unlawful for a person, not a veterinarian, to vaccinate hogs other than his own? About what would it cost if the county veterinarian was employed for this work?—Subscriber, Lancaster.

The hog cholera serum can be obtained from the agricultural department of the University of California at Berkeley. They may also carry a supply of the syringes, but they can be obtained from any surgical instrument store through your druggist. There is a law that is supposed to prevent such work being done by anyone but a qualified veterinarian. The county veterinarian would charge the same for time spent at vaccinating hogs as he would for any other work. There is no regular price set for it.—W. P.

Faulty Gait

I have a young stallion, coming three years old, that I am just breaking. I only drive him two or three miles at a time but he has developed what some people tell me is skelping. When he trots he strikes his hind foot against his front, hitting the hind foot about midway between the toe and the hair on both feet. When he does this he breaks and tries to run. How shall I have him shod to remedy this?—Subscriber, Morgan Hill.

Your colt is rather young for fast driving. You had better let him develop a little more; perhaps he will learn to travel wider behind. The proper shoeing for such a horse is to leave the toes of the hind feet long and cut the toes of the front feet short, rounding the toe of the front shoes a little. This will help him to break over a little quicker on the front feet and retard the hind feet enough to let the front feet get out of the way. A little more weight in the toes of the front shoes or toe weights will help some and reining him a notch higher will also help. Some horses are so short coupled that it is difficult for them to learn to travel without skelping and with some it is necessary to weld a thin piece of iron on the toe of the hind shoe, letting it extend up the front of the foot to prevent them wearing a hole clear through the wall of the foot.

Injury

I would like some advice about a crippled mare. The mare was hurt in a runaway in August. In jumping over a disk harrow she struck the

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front of her hind leg, above the ankle, on the iron frame of the harrow and cut or scraped the skin and flesh from the bone about six inches long, leaving it in a lump at the top of the wound. We applied black oil and kept it clean with soap and water and peroxide. It has not healed, but a lump of reddish flesh or gristle has grown in the wound until it is as large as my fist and is still growing. Please advise what to do with it.—Subscriber, Thermal.

When the leg was first injured you should have washed it clean and pulled the skin down to its place and put a bandage on. However, that is not what you want now. The lump should be removed by cutting it off with a sharp knife; the large blood vessels touched with a hot iron and then bind on an ounce of Monsel's iron powder. You can get the powder of your druggist. Put it on some surgeon's cotton and place it against the wound, then put on a bandage and leave it for a week. If you can not get it cut off you might try using the powder and apply it several times, leaving it on several days each time. After the lump is reduced it will only be necessary to keep the edges soft with a little bacon fat.

Spavin

Should bog and bone spavin have the same treatment? What treatment is the best and what are the lasting bad effects of the above troubles on the horse?—Subscriber, Tulare.

The treatment of bog and bone spavin generally is about the same. If either one is very bad the best treatment is to fire and blister it. The bad effect in either case, after the soreness is gone, is a slight stiffness of the joint which interferes with the speed and the smoothness of the gait.

Bots

Will you kindly give me a remedy for bots? I have a mule that I have doctored for colic and kidney trouble without success and now feel sure that he has bots. It comes on in violent attacks and he drops down wherever he is and lies on his back with his legs straight up and seems in great pain. It comes on after a long drive or if kept too long without feed.—Subscriber, Warner's Springs.

So far there has been no remedy discovered that will rid an animal of bots. When they are fully developed they will loosen their hold on the stomach and pass out with the feces. The symptoms that you describe would indicate that the mule has spasmodic colic or possibly an internal hernia. The following medicines will act as a tonic and probably relieve the trouble: Powdered gentian six ounces, powdered nux vomica three ounces, sulphate of iron three ounces and bicarbonate of soda four ounces. This will make one pound, and when you get it mix it with one pound of salt and half a pound of wood ashes. Give a tablespoon once a day.

Fails to Breed

Please give treatment for 18-months-old Jersey heifer that will not breed. She is in good condition and has plenty of exercise.—Subscriber, Rio Bravo.

You will find answer to a similar question in the Cultivator of December 3, on page 575.

Cholera Possibly

Lost sow with pigs four days old. Sick four days. Breathing labored. Two hemorrhages from nose before death. After death found lungs very small, inflamed and full of sores. Liver more than twice natural size. Entrails covered with clear sacks of yellowish liquid. Other organs natural. Was this tuberculosis or pneumonia?—Subscriber, Rio Bravo.

It sounds very much like cholera only the sickness was of short duration. Cholera affects the lungs and bowels much as you describe. It also affects the spleen and it too is usually enlarged, but you may not have noticed that.

Sick Hogs

Have had hogs sick three months. Lost several after two months. They were constipated at first then ran off at bowels until death. Ate fairly well even when unable to stand. Sows lost pigs sometime before death. Some had very sore mouth and one or more sore feet. Veterinarian pronounced it cholera and foot and mouth disease but did not quarantine. He opened none of those that died so can give no more symptoms. Is there a kind of cholera with which hogs are sick so long? Do you think the real foot and mouth disease exists here? These hogs have been in the neighborhood two years.—Subscriber, Kern County.

The real foot and mouth disease is not known to exist in California, but if your veterinarian thought it was such he should and probably would have reported it to the state veterinarian. Where an outbreak of cholera is not too violent the hogs often live several weeks and often some of them get well again. There is a disease in California that does affect hogs by causing ulcers in the mouth and sore feet, and is very severe on little pigs, that might truly be called foot and mouth disease, but is not the real foot and mouth disease that is giving so much trouble at present in our eastern states. We hope it will not reach here.

Screw Worms

In regard to "Screw Worms" in the Cultivator of October 29, 1914, in Veterinary Queries. My experience with the fly in Texas is that it does not lay an egg, but a live maggot with a hard black head, that starts boring into the sore or any place that has fresh blood on it. It is a bad pest in the shearing corrals of Texas, and all cuts and blood spots have to be spotted with sheep dip, calomel ointment, or some dip much stronger than will be required to kill the ordinary white maggot. The worm sticks his black head out above the flesh of the sore into the air when not working. I think any Texas stockman or sheep shearer will confirm what I have stated above.—W. A. Maddux.

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READ-MILLER CO

Louis B. Stanton, attorney, 243 Wilcox Building, Los Angeles, will answer legal queries in this department.

Immediate mail replies cannot be given except where fee to Mr. Stanton is paid. When replies are wished in Cultivator address query to 115½ N. Broadway, Los Angeles.

Restraint of Trade

A has a trade, but no capital. B has capital. A wishes B to stake him at his trade. B does so and they enter into partnership. B, to protect his capital, inserts the following clause in the partnership contract: "Neither one of the partners shall either by himself or with any other person or persons, directly or indirectly engage in the (such and such business) as long as the firm's name is in existence." Is this in restraint of trade? —Subscriber.

As to a sale of the business your contract would be void, being in restraint of trade, in that the clause should specify the county, city or part thereof, but not being a sale of the business and being a partnership it falls within a different class in that a general partner may not engage in any business which gives him an interest adverse to that of the partnership, and all profits made by general partner in the course of any business usually carried on by the partnership belong to the firm.

Telephone Poles

A bought a piece of land (unimproved) from B then found that a telephone line ran diagonally across this land. B stated that he never granted the company permission to take this step, and has no papers pertaining to this matter. The line has been there for about four years. A asked the company to remove the eight poles and set them along the road, and the company sent out several officials who conferred with A regarding the removal of the poles. They agreed to remove the poles within the desired time, but no papers were made out. If they remove the poles and set them along the road can the company force A to help pay for the expense incurred in this work? Or, if the company fails to do as agreed can A take any steps to force the company to remove the line?—Subscriber, Orange.

If the company has no right-of-way upon the property their lines may be removed just as the property of any trespasser.

Workmen's Compensation

In case of injury to an employe, what should he do to obtain compensation under the employers' liability act?—Subscriber, Parlier.

From the statement of facts in the above inquiry, which has not been set forth at length, it would seem that the employing company would be liable for a defective pump, especially where it had been notified of the defect. In order to obtain compensation, unless the employer has actual knowledge of the accident, the employe should, within thirty days after the occurrence, give such employer notice in writing, stating the name and address of persons injured, time and place where the accident occurred, and nature of the injury, and within sixty days file with the indus-

(Continued on Page 607.)

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The Household Department

BE YOURSELF A STAR!

The pessimist firefly sat on a weed
In the dark of a moonless night;
With folded wings drooped over his breast
He moped and he moaned for light.
"There is nothing but weeds on the earth," said he,
"And there isn't a star in the sky."

"Then be your own star! then be your own star!"
An optimist firefly said,
"If you'll leap from your weed, and will open your wings
And bravely fly afar,
You will find you will shine like a star yourself,
You will be yourself a star;
Yes, the thing you need
Is to leap from your weed
And be yourself a star."—Sam Walter Foss.

THE CHILDREN'S READING

Written for California Cultivator
By Jean A. Koethen

SOME thirteen years ago when my twin son and daughter were three years old I had occasion to give before a meeting of women my idea in regard to the mother's direction of her children's reading. My theories were criticised at the time as good but impractical, and as I had not tried them out I could not prove that they were practical. Now I have tried them out, and I know what I suspected before, that it is quite possible for a mother to lead her children into such paths that whatever they get or do not get elsewhere, they may have all their lives the company and inspiration of the world's greatest thinkers.

Every sort of theory must have at least one leg to stand on. Mine has four.

1. Every child will read something.
2. The German proverb, "Der Mensch ist was er isst" (A man is what he eats) might well be paraphrased, "A man is what he reads," so true is it that one's taste in literature very largely forms his character.
3. The taste for what is elevating must be formed at home; schools have but little time for it.
4. It must be formed in the impressionable years between four and fourteen. Few people who have not at the age of sixteen acquired a taste for the best and a discrimination which enables them to choose between the real thing and the imitation will ever acquire either taste or discrimination.

We began, of course, with fairy stories. Why "of course?" Some of my best friends have taken issue with me on that point. They object: "Why not give them true stories? Why not fill their minds with facts instead of fancy?" Why, dear objector, because to the child mind fairy stories are true stories. Your normal child lives in a world of romance, just as all primitive peoples do. Elves and fays and giants and ogres are perfectly real to him, though he knows they never existed. Every nation has passed through its time of childhood, and the stories which were passed from lip to lip in the childhood of the race are the stories which belong to the child of every race.

But why sneer at fairy stories as being mere fabrications? The deepest moral truths, the profoundest philosophy, run like a silver thread through nearly all of them. In that simplest tale, "The Sleeping Beauty," the kind wish of a kind heart breaks the power of evil. In Anderson's story of "The Twelve Swans," in which twelve brothers are turned into swans by a wicked enchantress and can only be set free by their young sister who must weave twelve shirts from nettle leaves without speaking one word till the task was finished, the ultimate triumph of self-sacrificing love is shown as clearly as it ever was in any "Sunday school" story. Lowell's immortal words,

Truth forever on the scaffold, wrong forever on the throne,
But the scaffold sways the future, and behind the dim unknown
Standeth God within the shadow, keeping watch above His own,

may be said of the profound philosophy of these simple fairy tales just as truly as of the wanderings of the Chosen on the plains of Judea 5000 years ago. All real literature—I mean all literature which outlasts the generation in which it was produced—whether fairy tale, novel, poem or drama, has this moral quality. It must depict vice as bad and goodness as admirable, evil punished and virtue rewarded, or it cannot "hold the mirror up to life."

We have been fortunate all these years in having access to a city library, and so we have been able to study the fairy tales of all nations and to see how this thought of the ultimate triumph of good over evil runs through them all. Some of the best of them, like the story of the "Twelve Swans," are found with slight variations in many languages, but there is nothing more typical than the compilations of Grimm and Anderson, and these may be had very cheaply and should be in every home where there are children.

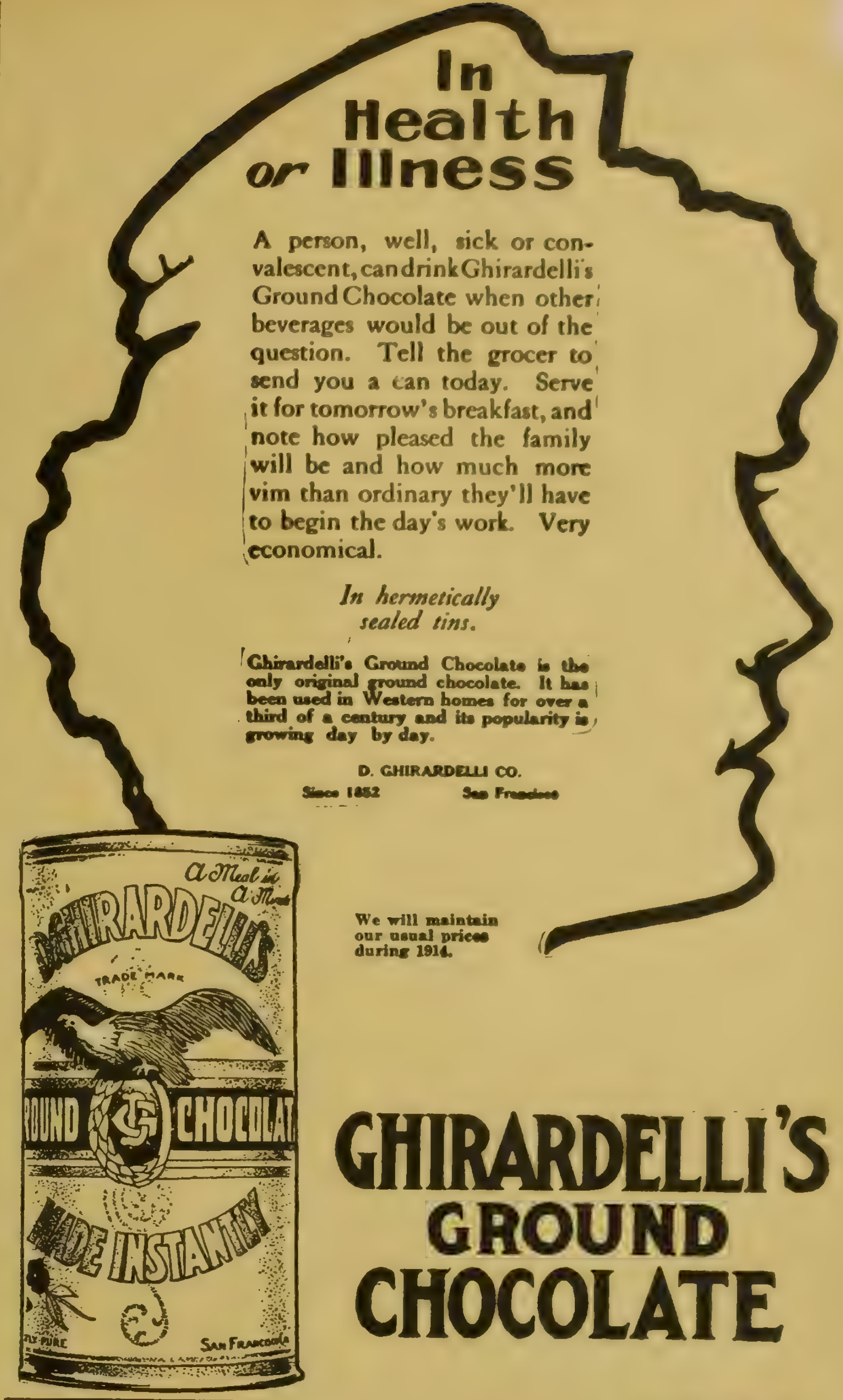
When Dorothy was six and a half she had to go to the hospital for an operation, and it was there, through the kindness of another child patient, that we were introduced to "The Wonderful Wizard of Oz," one of the wisest tales that was ever written. She heard it through twice at the hospital and again at home, and then she and her brother began to read it for themselves. They almost learned to read out of that book. Mr. Baum has written many other good stories, and we have read them all, some more than once, but not one even approaches "The Wizard of Oz." I should not know how to bring up a child without it.

It was time now for something heavier, and about the time the children entered school we began on the legends of King Arthur and the Round Table. These legends are the very foundation of English literature, and I have never been able to understand why they are so neglected in the public schools. The moral truth underlying the search for the Holy Grail is as profound as can be found anywhere.

"His strength is as the strength of ten
Because his heart is pure."

is a bit of philosophy no boy can learn too early.

From the Arthurian legends, on



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which we spent a good many months, it was only a step to mythology. We began with the myths of Greece and Rome, but were able, because of our access to the library, to dip into the myths and legends of India, China, Persia and nearly every other nation. These myths were read and told and read and told again at intervals for the next five years. Perhaps I ought to explain here that my children have a father who is an indefatigable reader and story teller. I should have given up in utter weariness and despair, for I do not like to tell stories, and I can never remember the labors of Hercules or the wanderings of Europa—probably because I was not brought up on them as my children have been.

We did not devote ourselves entirely to myths and legends all this time. There were other stories—"Alice in Wonderland," Kingsley's "Water Babies," "The Arabian Nights," "Robinson Crusoe," McDonald's "At the Back of the North Wind," "The Little Lame Prince" and many others I do not remember now, all of a sort which might be grouped together under the name "classics."

The children were ten or eleven when we made our first excursion into the realm of fiction. I have always believed that Dickens must be read early or never, so we started in about this time on "David Copperfield." It was a little heavy, and we concluded it was best to let Dickens wait a year or so. We did wade through this one story, but we read it again later and enjoyed it much more. Twelve or thirteen is young enough for Dickens, but sixteen is too old, if one has not commenced before.

We read "Dombey and Son," "Martin Chuzzlewit," "Pickwick Papers," "Bleak House," "Old Curiosity Shop," 'Nicholas Nickleby," "David Copperfield and "Tale of Two Cities." "Oliver Twist" we did not have the courage to try. It is too gruesome for children. The "Tale of Two Cities" is to my mind one of the greatest of historical novels. Volumes of history would not leave on a youthful mind the picture it leaves of the French revolution.

As the children were now in high school and studying ancient history, we tried to find historical novels which would fit in with their school work. Those of Ebers' seemed best for this purpose, and we found "Uarda," "The Bride of the Nile" and "An Egyptian Princess" very much worth while. We had tried before this to become interested in Scott, but except for "Ivanhoe," none of us could quite manage it. It is a great pity Scott is so difficult to read, but we are going to try "Kenilworth" and "Waverly" again and find out just where the trouble lies.

Probably some of my readers will be shocked when I confess that we turned from this rather solid reading to pirate stories with a good deal of joy. I don't think I ever enjoyed anything more than I did "Treasure Island," as I saw it through the children's eyes. We went about the house reciting

"Fifteen men on the dead man's chest,
Yo, ho, ho and a bottle of rum"

with real piratical thrills. There were several other stories of the same sort: "Kidnapped" was one, "Prisoners of Hope," by an author whose name I do not remember, and Cooper's "Pilot and Spy." "The Master of Ballantrae" we were a little leary of because there are horrors in in which I do not like for children.

Possibly some one asks, "Why have you omitted Miss Alcott's stories, which should naturally come in at this time? Just for this reason: Miss Alcott's stories are not classics, and some of them contain little hints at boy and girl love affairs which we did not consider profitable. We did read "Jack and Jill," and were disappointed. If boys and girls of this age must have love stories, and they must, for it is part of life, let it be the real, big, romantic sort, like Lorna Doone, which we read when they were thirteen or fourteen. If there is one novel in the English language that is more nearly above criticism than any other, it is this story of country life and love in the old days. The breath of the hills is in it, the rush of the mountain torrent and the freshness and buoyancy of life in the open. Kipling's "Kim," which we read during the same period, we enjoyed almost as much as Lorna Doone." It is a wonderfully vivid picture of British life in India, and with its boy hero is particularly suited for adolescent boys and girls. The scenes in this, too, are laid out of doors, and one hears the call of the hills as well as the steady tramp of feet as the countless hordes of this caste-ridden nation come and go.

I must confess to a great fondness for outdoor novels, piratical or otherwise, and we found in "The Shepherd of the Hills" and "The Heart of the Hills' 'the same atmosphere we had loved in "Lorna Doone" and "Kim."

After the children reached the third year in high school their school duties made it impossible for us to read as regularly as we had before, but we found time for several of the Sherlock Holmes stories, and have commenced "The Count of Monte Cristo," which I think must be the longest novel in any language. It is certainly the least profitable thing we have tried, in spite of its great reputation, and I never expect to finish it.

This list does not by any means comprise all we have read, but includes, I think, the novels and stories which are typical—just "hits the high spots," as it were. A family which had not access to a good library could not, of course, do as much, but many of these standard novels can be had very cheaply in the department stores. I have often seen stories of Dickens offered for 25 cents, and Scott and Thackeray are as cheap. It is the new things that are expensive.

Some one will doubtless ask, as I have been asked before, "Why not more history and less fiction?" There are several reasons. One is that the children were having a good deal of history in school. Another that there is really very little history, outside of novels, that is also literature. We tried to read Dickens' Child's History of England when they were quite young, but never finished it, and we expect to add Carlyle's Oliver Cromwell and French Revolution, which are both history and literature, to the list, and perhaps some real history of the French revolution. If you want to make family reading a pleasure, you must read things the family like, else it is mere drudgery. We have been aiming, not to make the children walking encyclopedias, but to give them a taste for the best literature and a love for a quiet evening round the shaded lamp, and in this we have succeeded.

IN THEIR STEPS

"Look here, now, Harold," said a father to his little son, who was naughty, "if you don't say your prayers you won't go to heaven."

"I don't want to go to heaven," sobbed the boy; "I want to go with you and mother."

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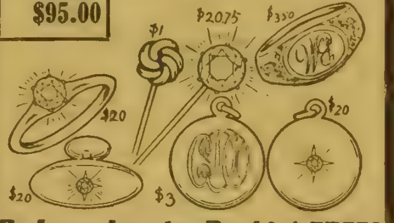

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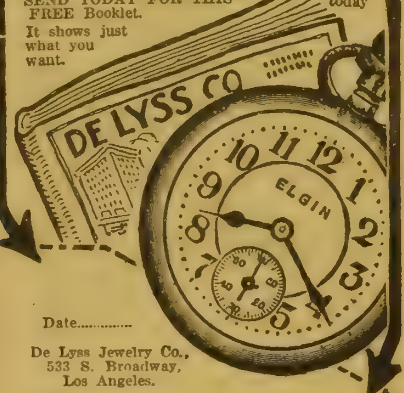

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TO GIVE OR NOT TO GIVE

Written for California Cultivator
By Mrs. G. H. Pettengill, Los Angeles

In the interest of our now overcrowded bric-a-brac spaces, in the interest of our wrapped-up-in-tissue-paper-and-put-away-things that we never use, and in the interest of sane giving in general, please, please listen to the oracle and ruminate well before buying those huge ornate vases for sister's diminutive parlor, those cigars huband never smokes, that gorgeous roll collar for grandmother, that bedecked and beruffled boudoir cap for mother, that traveling toilet case for the mother of two or three babies, those dainty little chocheted bootees for the now walking baby, or that nice warm fascinator for your niece in balmy Southern California. Brother is a fine young fellow, but he doesn't appreciate that beautiful pale pink or sky blue stationery which you gave him last year, and your chum does love you but being such a one as yourself, she must needs wear her stays, so what shall she do with that brocaded ribbon bag?—it's too long to take shopping.

Yes, those were beautiful jabots you fussed up last year, but we all have more than we can wear of them—not that I would have you think for a minute that I seem to appear to presume to look a gift horse in the mouth—but why not give some of these highly acceptable little trinkets?

Big brother, if he be an average brother (and I am "oracleing" only for "averages"), will be pleased with a well chosen necktie, a scarf pin, an umbrella, gloves, books, an appropriate picture for room (those of pretty girls preferred), or if he is a smoker, some adjunct to that avocation. Has he a fountain pen and a watch fob? Then how about a small abridged dictionary? If he scans it carefully he may be able to find something appropriate for you.

And mother! poor, dear mother, if there is anything in the house that needs replenishing, regardless of the fact that we all helped deplete it, every one of us feels urgently called upon to buy it for mother's Christmas present; rugs, rockers, lace curtains, wash tubs, ringers and mop sticks! Give mother something for herself this year, a box of stationery with the envelopes all stamped, a fountain pen all her own, a glove order or two, a box of handkerchiefs or a box of hosiery, an auto veil, a fur neckpiece, a year's subscription to her favorite magazine, a copper plate and a hundred engraved cards, why, she would be fully as well pleased with any of these articles as she would with a boot-jack! Try her and see!

And how about father? Almost anything suitable for brother would please father too, with the possible exception of the picture. And in addition there are doubtless half a dozen magazines which would appeal to his various mental moods, while a morris chair or a foot stool would appeal to the flesh and bone of him, and then an individual reading lamp, and we have father comfortably ensconced for the evening, utterly oblivious of how late Percy stays or at what hour Geraldine arrives home from the party.

And what will sister have? Oh, there are dozens of acceptable gifts for her; guest towls and pillow slips for her "hope chest" (the chest itself, if she hasn't one), books and stationery, the latter monogramed, please, with the die included, a vanity case, the small "Saratoga trunk" kind, a kodak, a silver or ivory toilet article for her bureau, a bureau scarf (be sure to ascertain the color scheme of her room), a silk hat bag for traveling, chocheted lace for her lingerie, tatting bordered handkerchief, beads, silk hosiery—all would please her exceedingly, but rather than all, I am sure she would prefer a soltaire for the third finger of her left hand.

Then, I, the mistress of the house, whether I be aunt, sister, cousin, wife or mother, give me all these things without stint, full measure pressed down and running over, first, aluminum kitchen ware, such as pie plates, percolator, tea kettle, sink strainer, big kettles and little kettles, stew pans, measuring cup, spoons and gem pans, all these and then anything else I may have omitted; a dustless duster in its own little bag for each room in the house, a fireless cooker, a set of salad plates, a dustless mop, soft cushions ready to use, books, stationery (never mind the monogram!) bread and butter knives, glove and hosiery orders, silk waist pattern, a potted fern—with jardiniere attachment—a gold thimble and a couple of pairs of scissors. These, just by way of letting you know my tastes and trusting it may divert your mind from useless bric-a-brac, enough of which I have to dust already, for bear in mind I am not writing for the benefit of the family whose income is only measured by its outgo, but rather do I seek to solve the problem of the great majority—we who are just folks. (Made in U. S. A., too!)

IDEAS FOR THE COOK

Written for the California Cultivator
By Isabel Cottle

Breakfast

Grape Fruit with Maple Syrup
Toasted Triscuits, Cream
Bacon Omelet Whole Wheat Muffins
Raspberry Jam Coffee

Lunch or Supper

Fried Salt Pork with Codfish
Potatoes Boiled in Jackets
Swiss Chard Drawn Butter
Rolls
Fig Pudding, Lemon Sauce
Tea or Milk

Dinner

Roast Beef Fried Apples
Creamed Spaghetti
Potato Salad in Tomato Cases
Cream Sponge Cake Canned Plums
Coffee

Fried Salt Pork with Codfish

Cut fat salt pork in one-fourth inch slices, cut gashes one-third inch apart in slices, nearly to rind. Try out in a hot frying pan until brown and crisp, occasionally turning off fat from pan. Serve around strips of codfish which have been soaked in pan of lukewarm water and allowed to stand on back of range until soft. Serve with drawn butter sauce.

Potato Salad in Tomato Cups

Prepare a good potato salad, boiling four medium sized potatoes in jackets. When cool peel and slice thinly, first cutting through the potatoes lengthwise a couple of times. Add some crisp chopped celery, a little onion if desired and salt to tase. For the dressing mash or force through a sieve the yolks of two hard boiled eggs, season with mustard, salt and white pepper. Mix smooth with vinegar and add one cup sweet or sour cream, with more vinegar if needed. Pour over the potatoes. Remove centers from medium sized, ripe tomatoes and fill with the salad, garnishing top with a sprig of parsley.

Cream Sponge Cake

Yolks four eggs, one cup sugar, three tablespoons cold water, one and one-half tablespoons cornstarch, flour, one and one-fourth teaspoons baking powder, one-fourth teaspoon salt, whites of four eggs, one teaspoon lemon extract. Beat yolks of eggs and water until thick and lemon-colored, add sugar gradually and beat two minutes. Put cornstarch in a cup and fill cup with flour. Mix and sift cornstarch and flour with baking powder and salt, and add to first mixture. When thoroughly mixed add whites of eggs beaten until stiff, and flavoring. Bake 30 minutes in a moderate oven.

Fig Pudding

One-fourth pound suet, one-half pound figs (finely chopped), one large sour apple (cored, pared and chopped), one-fourth pound brown sugar, one-fourth pound bread crumbs, one-fourth cup milk, two eggs, three ounces flour. Cream the suet and add figs, apple and sugar. Pour milk over bread crumbs and add yolks of eggs, well beaten. Combine mixtures, add flour and whites of eggs beaten until stiff. Turn into buttered pudding mould, and steam four hours. Serve with lemon sauce.

Lemon Sauce

One-third cup butter, one cup sugar, yolks of three eggs, one-third cup boiling water, three tablespoons lemon juice, a little grated lemon rind. Cream butter, add sugar gradually, and yolks of eggs, slightly beaten, then add water, and cook over boiling water until mixture thickens. Remove from range, add lemon juice and grated rind.

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EQUIPMENT FOR EVERY ELECTRICAL NEED

San Francisco-Los Angeles Produce Markets

Los Angeles Market

LOS ANGELES, Dec. 9, 1914.

The prices given below, except where otherwise noted, are those made by wholesale or commission houses to retailers, and are intended to give producers the range of the market rather than an indication of prices which they will secure. Jobbers' quotations to producers are not given.

BUTTER

Butter stands exactly at last week's quotations. Receipts, from 50,000 to 60,000 pounds daily.

Prices to trade 4 cents above following quotations:

Creamery Extras	.30
First	.28
Country	.23
Ladle	.22

CHEESE

Prices to trade, 1 and 2 cents higher:

California Fresh	14@14½
Domestic Swiss	20@21
Eastern Daisy	18@18½
Longhorn	18@18½
Oregon Triplets	17@17½

EGGS AND POULTRY

Storage eggs are now being offered at 25½ by jobbers. This for May eggs, while April stored eggs are commanding 26. Eastern fresh are going at 28½ and a few Chinese are being offered at any price which buyers will pay, and but few moving.

Prices to trade, 3 cents higher than following quotations:

Fresh ranch, case counts	.39
Candled	.43
Northern Case Counts	.40
Petaluma-Santa Rosa	.41

Prices to producers:

Hens, lb.	15@18
Roosters, old	.9
Broilers, lb.	.24
Fryers	.20
Roasters, lb.	.15
Turkeys	18@20
Ducks	17
Geese	.14
Squabs, doz.	2.00

LIVE STOCK

The following quotations are f. o. b. Los Angeles on all stock:

Hogs, 175 to 200 lbs., per cwt.	$7.75
Prime Steers	7¼@7½
Heifers	6¼@6½
Calves, lb.	8½@9
Sheep—	
Ewes, head	4.50
Wethers	4.50@5.00
Lambs, head	4.50@4.75

POTATOES

Wholesale selling price:

Idaho	1.25@1.35
Sweets, lug	.65@75
Northern Burbanks, cwt.	1.25@1.30
Salinas	1.90@2.00
Shimas	1.35@1.45
Lompocs	1.90@2 00

ONIONS

Wholesale selling price:

Australian Brown, cwt.	1.50@1.75
White Globe	2.75@3.00
Yellow Danvers	1.50@1.75
Garlic	14@16

VEGETABLES

Wholesale selling price:

Artichokes, Northern, doz.	75@1.00
Beets, doz.	30@35
Beans, String	6@9
Lima	5@6
Cabbage	65@75
Carrots, doz.	30@35
Cauliflower, doz.	50@60
Celery, crate, northern	2.00@2.25
Local	1.65@1.75
Corn, Sugar, box	.60@65
Cucumbers, hothouse	65@1.25
Egg Plant	4@6
Escarole, doz.	.40
Horseradish, lb.	15@16
Leeks, doz.	35@40
Lettuce, crate	1.00@1.20
Mint, doz.	35@40
Parsnips, doz.	25@30
Okra, lb.	9@10
Onions, Green, doz. bunches	15@20
Oyster Plant	30@35
Peas, lb.	7@10
Peppers—	
Bell, lb.	3@5
Chili, lb.	4@5
Pimientoes	6@7
Pumpkins, lb.	1½@2
Radish, doz.	20@30
Rhubarb, box	80@85
Spinach, doz.	.20
Squash—	
Summer, lug	.60@75
Crookneck	35@45
Hubbard, lb.	1¼@1½
Turnips	30@35
Tomatoes, lug	75@85

FRESH FRUIT

Wholesale selling price:

Apples—	
Bellflowers	.90@1.00
Jonathans	1.35@1.60
Spitzenbergs	1.35@1.50
Rome Beauty	1.35@1.50
Pearmains	85@1.00
Bananas	3½@4
Berries—	
Strawberries, basket	5@11
Raspberries	12@15
Blackberries	13@15
Casabas, doz.	1.40@1.65
Cranberries, bbl.	7.75@9.00
Figs, box	1.75@2.00
Grapes	1.25@1.60
Guavas, basket	3@4
Pears, Winter Nelis, lug	1.50
Packed	2.50
Persimmons, lb.	4@8
Pineapples, lb.	6@6½
Pomegranates, box	1.60@1.80
Quinces	.75@85

CITRUS FRUIT

Wholesale selling price:

Lemons	1.25@2.75
Grapefruit, Seedless	2.50@2.75
Navels	2.25@2.35
Tangerines	1.75@1.90
Limes, basket	.75@1.00

DRIED FRUITS

Wholesale prices to retailers are:

Evaporated Apples, Fancy, lb. boxes	6¼@7½
Apricots	8½@10
Nectarines	12½
Peaches	5½@6
Pears	8@12
Prunes	5¾@17
Plums	.10

NUTS

Prices named by California Walnut Growers' Association are:

No. 1	.16½
Budded Walnuts	.20
Jumbos	.19
No. 2	.12
Culls	.9

Prices fixed by California Almond Growers' Exchange, f. o. b. California.

Almonds—	
Nonpareil	.21
I X L	.20
N P U	.19
Drake's Thinshell	.16
Pecans	.17
Peanuts—	
California, Raw	.6
Japan	.7½
Eastern	.7½
Rice Corn	5.00@5.25

HONEY

Wholesale selling price:

Comb, Fancy, Water White	.14
White	.12
Light Amber	.11
Extr. Water White	.7
White	.6
Light Amber	.5½
Beeswax	.32

RICE

Wholesale selling price:

California	4.75@5.00
Broken	3.50@3.75

BEANS

Wholesale selling price:

Producer's price not far from one dollar under these quotations:

Limas	5.60@5.75
Lady Washington	5.15@5.25
Pinks	4.15@4.25
Black Eyes	4.90@5.25
Lentils	8.00@9.00
Navy	5.25@5.35
Small White	5.00@5.10
Garbanzos	6.00@7.50

HAY

Buying prices f. o. b. cars Los Angeles:

Barley	10.00@11.00
Wheat Hay	10.00@11.00
Tame Oat	11.00@13.00
Alfalfa	9.00@11.00

GRAIN

Wholesale selling prices f. o. b. Los Angeles:

Corn, Yellow	2.00
Corn, White	2.10
Wheat	2.20@2.25
Oats, Red	2.25@2.50
Oats, White	1.85
Kaffir Corn	1.75
Millet	3.75
Popcorn	4.75@5.00
Egyptian Corn	1.85
Barley Seed	1.50
Milo Maize	1.75
Cal. Seed Oats	2.25
Sunflower Seed	6.50

FEED STUFF

Wholesale selling prices f. o. b. Los Angeles:

Bran, Heavy	1.55
Alfalfa Meal	1.00
Alfalfa Molasses, per cwt.	1.15
Beef Scraps	3.00
Beet Pulp	1.20
Cracked Corn, cwt.	2.00
Cracked Wheat, cwt.	2.35
Cotton Seed Meal	1.70
Bloodmeal	3.60
Bone Meal	1.95
Meat Meal	3.00
Bone, Green	1.85
Charcoal	1.90
Oil Cake Meal	2.00
Fish Meal	3.15@3.25
Rolled Oats	1.90
Rolled Barley	1.40
Middlings	1.85
Feed Meal	2.05
Oat and Wheat Middlings	1.60

San Francisco Market

SAN FRANCISCO, Dec. 8, 1914.

The prices given below, except where otherwise noted, are those made by wholesale or commission houses to retailers, and are intended to give producers the range of the market rather than an indication of prices which they will secure. Jobbers' quotations to producers are not given.

BUTTER

Soon after last week's quotations a slump occurred, extras dropping to 29 cents. This was recovered on Saturday and quotations are almost back to those of last week.

Prices to trade, 4 cents above following quotations:

Extras	.31
Prime Firsts	.27
Firsts	.26
Seconds	.24

CHEESE

Wholesaler to retailer.

Oregon Y. Am.	.16
Young America	.15
California Flats	10@13½
Cheddar	.20
Oregon Twins	.14½

EGGS AND POULTRY

A serious slump occurred soon after last quotations. They reached, however, 39½ cents on Saturday and only a half cent was added on Monday morning. Storage stock is meeting indifferent demand.

Prices to trade 3 cents higher than following quotations:

Extras	.40
Select Pullets	.33
Storage Extras	.27½

Price to producer:

Hens, lb.	15@18
Eastern	16@19
Fryers	19@20
Roosters, old	.12
Roosters, young	.16@17
Broilers	19@21
Ducks	4.50@7.00
Geese	2.00@3.00
Squabs	2.50@3.00
Belgian Hares, lb.	9@10
Turkeys	20@22
Dressed	24@26

LIVE STOCK

San Francisco prices, gross weight:

Steers	4@7¼
Cows and Heifers	3@6¼
Calves, lb., live weight	6@9½
Hogs	5@7¾
Wethers	6@6½
Ewes	5¼@5¾
Milk Lambs	7@7½

POTATOES

Wholesale selling price:

Delta Burbanks	90@1.15
Salinas Burbanks	1.35@1.50
Oregons	1.00@1.25
Sweets, cwt.	1.35@1.50

ONIONS

Wholesale selling price:

Oregons, Yellow	1.00@1.25
Bermudas, crate	1.00@1.25
Garlic, new	10@15

VEGETABLES

Wholesale selling price:

Beans—	
Wax	4@8
Strings	3@8
Limas, lb.	5@9
Brussels Sprouts, lb.	4@4½
Cabbage, cwt.	1.00@1.25
Carrots, sack	30@40
Celery, doz.	20@25
Cucumbers, lug	1.25@1.50
Egg Plant, lb.	3½@6
Lettuce, crate	50@1.25
Peppers—	
Bell, lb.	4@5
Chili, lb.	3@5
Squash, sack	40@50
Summer, crate	75@1.00
Tomatoes	40@75

FRESH FRUIT

Apples—	
Bellflowers, storage	65@75
Spitzenbergs	1.15@1.50
Winesaps	90@1.25
Newtown Pippins	50@75
Bananas, Hawaiian, bunch	1.25@1.75
Cranberries, bbl.	8.00@8.25
Grapes lug	80@1.00
Huckleberries	5@7
Pears, Winter Nelis, wrapped, box	1.25@1.50
Pomegranates, box	50@1.00
Pineapples	2.75@3.25
Persimmons	25@75
Quinces, box	25@40
Strawberries, chest	3.50@5.00

CITRUS FRUIT

Wholesale selling price:

Grapefruit, Seedless, new crop	1.75@2.50
Lemons	1.25@4.00
Lemonettes	75@1.25
Limes, case	3.00@5.00
Navels	1.75@2.25
Tangerines, halves	2.00@2.25

DRIED FRUITS

Wholesale prices are:

PRUNES—1914 crop, bulk basis: 30-40s, 7c; 40-50s, 6c; 50-60s, 6c; 60-70s, 6c; 70-80s, 6c; 80-90s, 6c; 90-100s, 5¾c. 1913 crop worth practically same prices. The above are for both Santa Clara prunes and stock from outside sections.

Other Fruits, 50-lb. boxes—	Standard	Ch.	Extra Ch.	Fcy.
Evaporated apples	4¾	5	5¾	
Apricots	7½	8½	9	10½
Peaches	3¾	4	4¼	5½
Pears	7	8	9	10

RAISINS

RAISINS—The following prices are f. o. b. Fresno, as given out by the Associated Raisin Company for November shipments and are guaranteed against a decline till December 31st: Fancy seeded, 16-oz., 7c; 12-oz., 5¾c; bulk, 6c; choice seeded, 16-oz., 6¾c; 12-oz., 5½c; Thompson seedless, No. 1, 16-oz. pkgs., 7⅜c; 12-oz., 6c; 50-lb. cases, 6¼c; loose Muscatels, 1-crown, 5½c; 2-crown, 5½c; 3-crown, 5¾c; 4-crown, 6c; Sultanas, 50-lb. cases, 5½c; bulk, layers, 50-lb. bxs., $2.75; in 20-lb. bxs., 6-crown, $2.75; 5-crown, $2.25; 4-crown, $1.60; 3-crown, 5-lb. bxs., on all bulk stock, 50c additional; 10-lb. bxs., 25c additional. Cartons—Clusters, 20 to a case, No. 1, $1.70; No. 2, $2.10; No. 5, 4 to a case, $2.25. Local representatives of the association are asking about ¼c higher, while several of the largest packers are quoting ½c under these figures.

NUTS

ALMONDS—Prices fixed by Almond Growers' Exchange to the trade, f. o b. California:

Nonpareil	.21
I X L	.20
Ne Plus Ultra	.19
Drakes	.16

Wholesale selling price:

Peanuts—	
Unpolished	5@8
Polished	6@6½
Japanese, Shelled	6¼@6¾
Italian Chestnuts	6½@7

BEANS

Wholesale selling price:

Limas	5.40@5.50
Lady Washington	3.60@3.75
Pink	3.50@3.60
Black Eyes	4.10@4.30
Cranberry	4.00@4.10
Small White	4.50@4.60
Garbanzos	5.75@6.25
Large White	4.30@4.40
Bayou	5.25@5.35
Manchurian Speckled Bayous	3.50@3.75
Manchurian Butters	3.90@4.10
Manchurian Cranberry	4.15@4.25
Red Mexican	545@5.55
Red Kidney	5.50@5.75
Horse Beans	3.00@4.00
Bayou, Mexican	4.25@4.50

HONEY

Comb, Water White	14@16
Amber	10@12
Dark	7@10
Extracted White	7@9
Light Amber	6½
Dark	4@5½
Beeswax	27@32

HOPS

1914

Sacramento Valley	8@10
Sonoma-Mendocino	9½@11½
Oregon Clusters	9½@11½

HAY

Under date of Dec. 5, Scott, Magner & Miller say:

Receipts for the past week were 1649 tons; the previous week, 2640 tons. Demand is exceedingly light. Receipts consist of poor and medium grades almost entirely. A few cars of fancy can be placed at top quotations.

WEATHER CONDITIONS

For Week Ending December 5, 1914

Report from the various stations of the U. S. Weather Bureau, by Geo. H. Wilson, director, San Francisco:

	Rainfall Data			Temperature Data	
	Past Week.	Seasonal to Date.	Normal to Date.	Maximum.	Minimum.
Eureka	2.27	10.34	10.85	56	42
Red Bluff	2.43	4.27	6.25	54	36
Sacramento	.75	2.02	4.14	58	36
San Francisco	1.83	2.35	4.65	56	44
San Jose	1.73	2.78	3.61	60	32
Fresno	.39	.97	2.23	58	32
Independence	00	.40	2.16	54	18
San Luis Obispo	1.83	2.03	3.77	64	38
Los Angeles	.78	1.29	2.61	68	46
San Diego	.57	2.48	1.52	66	46

T means trace.

The rains are coming at a most opportune time. All fields are cleared and a great deal of plowing and sowing has been done. Alfalfa remains in the same condition as heretofore. The straw market is unchanged.

We quote the average wholesale prices on carload lots on today's market as follows:

Fancy Wheat Hay, lt. bales	12.00@13.00
No. 1 Wheat or Wheat and Oat	9.00@11.00
No. 2 Wheat or Wheat and Oat	6.00@8.50
Choice Tame Oat	10.50@12.00
Other Tame Oat	6.00@9.00
Barley	5.00@7.50
Wild Oat	6.00@8.00
Alfalfa	6.00@9.00
Stock Hay	4.50@5.00
Straw	30@45

GRAIN

Alfalfa Seed	14@16
Wheat, Cal. Club	2.00@2.05
Corn Eastern Yellow, blk.	1.60@1.61¼
Corn, Egyptian White	1.55@1.57½
Barley, Feed	1.15@1.22½
Shipping and Brewing	1.26¾@1.27½
Oats, White	1.55@1.57½
Oats, Red, Seed	1.55@1.65
Oats, Red, Feed	1.35@1.45
Millet	3@3¼
Flax	6@6½
Rye	1.50@1.60
Sunflower	5@5½

FEED STUFF

Alfalfa Meal, car lots	14.00@14.50
Bran, ton	26.00@27.50
Feed Cornmeal, ton	39.00@40.00
Cracked Corn	39.00@40.00
Rolled Barley, ton	25.00@26.00
Rolled Oats, ton	37.00@37.50
Middlings	31.00@32.00
Shorts	27.00@28.00
Oilcake Meal	36.00@37.50
Cocoanut Oilcake Meal	23.00@24.00

Citrus Fruit Market

LOS ANGELES, Dec. 9, 1914.

Northern and central California are feeling rather chesty over good words being said of their early shipments of fruit. The growers started in with a determination to be honest with the purchaser and ship only ripe fruit. There has been a little green fruit shipped, but as a rule the grower has stood by the test recommended by the department and good prices are resulting. F. o. b. prices are now running not far from $1.75 to $1.90. One feature which causes a little concern is decay reported from some sections. This is thought to be due to careless handling and must be corrected, for it puts the fruit in the same class with Floridas. Reports from various markets show the Florida fruit to be decaying very badly. Several thousand boxes of Floridas which showed some decay sold in Philadelphia at $1.50. It is probable that 60 per cent of the fruit of northern and central California has been sent.

Lemons are in the same class as olive oil, they are being punished by immense importations from the Mediterranean. Many Californians are now going into storage, though enough are going forward to take care of those who prefer California fruit. Our fruit is selling in New York City markets 60 to 75 cents above imported fruit.

Shipments

Shipments of oranges from Southern California to date since November 1, 446 cars, lemons 361, total 807. To same date, last season, oranges 323, lemons 113, total 436. From Tulare County, this season, oranges 1950, lemons 69, total 2019. To same date, last season, oranges 2110, lemons 11, total 2121. From Butte County, this season, oranges, total 215. To same date, last year, 128.

DECIDUOUS CURED FRUIT SITUATION

SAN FRANCISCO, Dec. 1, 1914.

Although European conditions occasioned by the war are bad, there is a better tone in the dried fruit market; business is fairly steady with operators and everyone is looking for an improvement.

Prunes especially have advanced, probably because we now know about where we stand and what quantity we have and because we find certain sizes are short, which increases the demand for other sizes, and, again, because the French prune crop, which was looked upon as a formidable competitor for the English trade and which was also quoted in this country at low prices, will not leave France, as the French government has forbidden shipment out of the country. So far as prunes are concerned we do not look for any further decline.

Raisins show very little change though some quotations are still being made at prices below those established by the Raisin Association.

Apricots are moving fairly well and values slightly higher, especially in the Choice and Extra Choice grades; Standards are more or less weak on account of the large proportion, and some sections have quite a few Slabs which move very slowly.

Peaches are slightly higher, but the demand which was more active a week or so ago has quieted down. In our opinion, however, peaches will go no lower but should gradually advance. It is not a good thing when there is a coming demand for any variety to check it by too suddenly advancing the price to a higher figure, a steady advance rather than a spasmodic one shows a healthier condition.

The buying trade not having indulged in much speculation so far, but only having bought for immediate needs, should when business commences to steady itself buy more freely, as the low prices which have existed on some varieties of fruit should stimulate consumption.

It appears now as if this season's product might be disposed of before the beginning of another season. The federal banking system which went into operation about November 16 should help matters a great deal, but at first there necessarily will be many things that will not be understood and which time only will adjust. Possibly some do not realize that the federal bank is not a bank where individuals can borrow, but a bank where banks can borrow and recover a portion of the money that they loan to their customers, which enables them to reloan to others. The federal reserve board defines commercial paper on a broad plane but emphasizes three certain things that such paper must possess before it is eligible for rediscount with the regional banks: It must be issued for agricultural, industrial or commercial purposes and not for permanent investment. It must run for not more than 90 days and it must be especially self-liquidating. In other words, it must represent some distinctive stage in the productive or distributive process, such as the movement of goods from producer to consumer. It will undoubtedly stimulate greater credit and do away with many evils and abuses of the past and cause business to be conducted on a sounder basis.

Conditions like those which have existed for the past few months ought to prove conclusively to the growers the necessity of standing together, shoulder to shoulder, and by united effort gaining for themselves the control which others now possess and which once gained will place them in a position to at least have something to say in the management of their own affairs. Their capital, their work, their every effort belongs to themselves and should be employed for their good, instead of enriching those who have no interest other than what they can make out of the producer.—California Cured Fruit Exchange.

LEGAL

(Continued from Page 602.)

trial accident commission of the state of California, at its office in San Francisco or Los Angeles the written application stating the facts of the injury, name and address of the party injured and name and address of employer, statement of the character of the injury and the length of time for which the employe has been working for the employer and salary at time of injury. It would probably be better for you to have an attorney draw up the papers.

Proving Up Homestead

What does the law require a single man to do on a homestead? I have a homestead in Tulare County, which is situated in a very rough place. Can scarcely get a wagon on it and have to haul water a half mile. I have to work for my living and can't make it on said land. Would I be compelled to live there all the time and would it be against the law to cut wood there if I have a timber or rock claim? How long would I have to live on it, what improvements would I have to make and what would it cost per acre to pay it out?—Subscriber, Orange.

You are required to reside upon your homestead for a period of three years in order to obtain a homestead title, except that you may commute this residence by residing upon property for 14 months and paying $1.25 an acre. You may cut wood on land.

(Write to General Land Office, Department of Interior, Washington, D. C., for Circular No. 224, "Suggestions to Homesteaders and Persons Desiring to Make Homestead Entries.")

Accounts Outstanding

Answering an inquiry as to outlawing of open book accounts, Mr. L. B. Stanton recently stated that they outlawed in two years. This called forth a correction by Mr. Scott, of the Scott, Magner, Miller Co., who wrote that he thought this in error, for he had been advised that open accounts did not outlaw for four years. Referring this to Mr. Stanton, he writes:

"The Code which I used, through some error did not have mention of an amendment to the section, and therefore the answer was erroneous. The section under the four year limitation was amended so as to include an action to recover a balance due upon a mutual open current account or upon an open book account, changing the law with respect to open book accounts, which had theretofore come under Section 339, which read 'within two years an action upon a contract obligation or liability not founded upon an instrument of writing executed out of the state.'"

Disposal of Property

A dies, leaving property to be equally divided among three children and a grandson. In case this grandson dies before he becomes of age, who will fall heir to his share? Will his father get it all or will it be equally divided among the three heirs?—Subscriber, Escondido.

It depends somewhat on the will. If the property was given absolutely to the grandson, in case of his death before becoming of age, without will, the estate goes to his father and mother in equal shares, and if either is dead then to the other. If the property be not vested in the grandson prior to majority, it would very probably revert to the estate and be subject to equal division among the heirs.

Abstract of Title

If I borrow money from bank on my ranch and give first mortgage, and the bank bring abstract of title up to date, at the end of three years, when the interest and debt has been paid, is it the bank's duty to bring the abstract of title up to date to the borrower? Also, would like to know, when buying an irrigation right, just how the title should be signed up to be good?—Subscriber, Sacramento.

An abstract of title is a search made of records by private person, firm or company, and there is no law as to who shall pay for it or as to what it should contain. It is never the custom, however, for a lender to pay for bringing an abstract up to date at any time. An abstract of title merely shows the papers which are on record in regard to any property.

Irrigation Right

In buying irrigation right, how should title be signed up?—Subscriber, Sacramento.

As irrigation rights are of such widely different natures, sometimes not even showing upon the records, as in case of riparian rights, it would be impossible to say what would be sufficient.

THE CHRISTMAS THOUGHT

Ideas on Christmas giving are rapidly changing among the sensible. Those who think as they give are looking for a year-round service as the important thing.

In a week of shopping, with all its strain, you will not find a better gift than a year's subscription to The Youth's Companion. It offers its service, its clean entertainment, its fine suggestiveness week after week; and the end of the year, which finds many a gift in the attic, dust-covered and forgotten, brings The Companion again, with all the charm of last Christmastide.

No American monthly at any price offers the same amount of reading, and none can offer better quality. Less than four cents a week provides this best of Christmas gifts—$2.00 a year. If you subscribe now, all the remaining issues of the year will be sent free, and The Companion Home Calendar. A copy of the Calendar is also sent to those who make a gift subscription. Send for sample copies, and the Forecast for 1915. The Youth's Companion, 144 Berkeley Street, Boston, Mass. Subscriptions received at the office of the California Cultivator.

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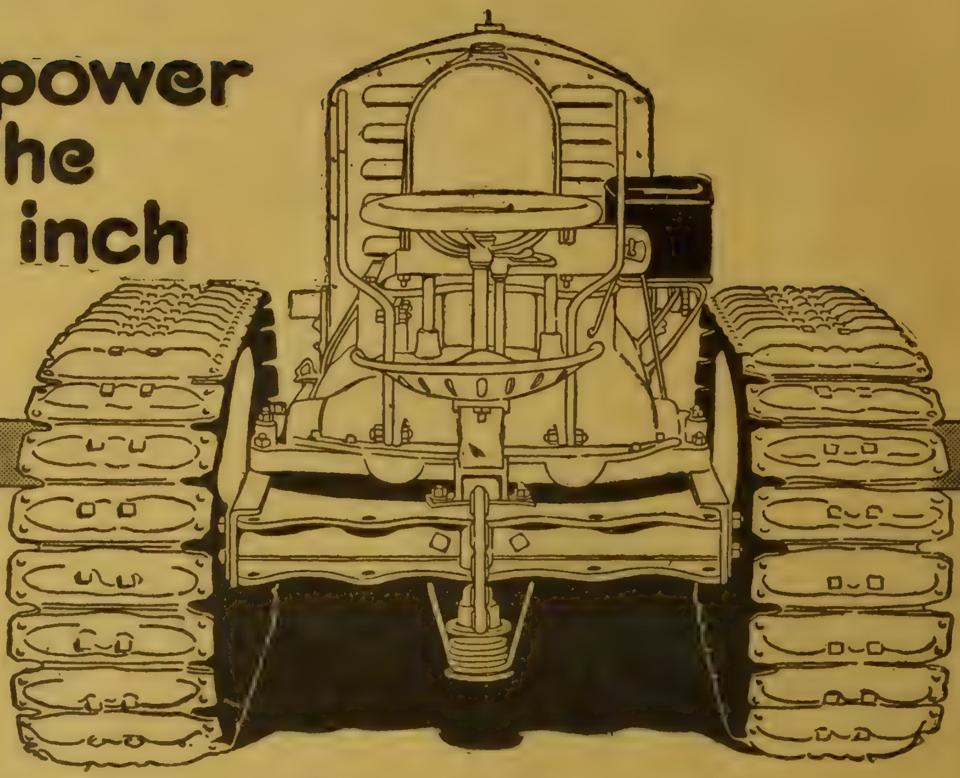

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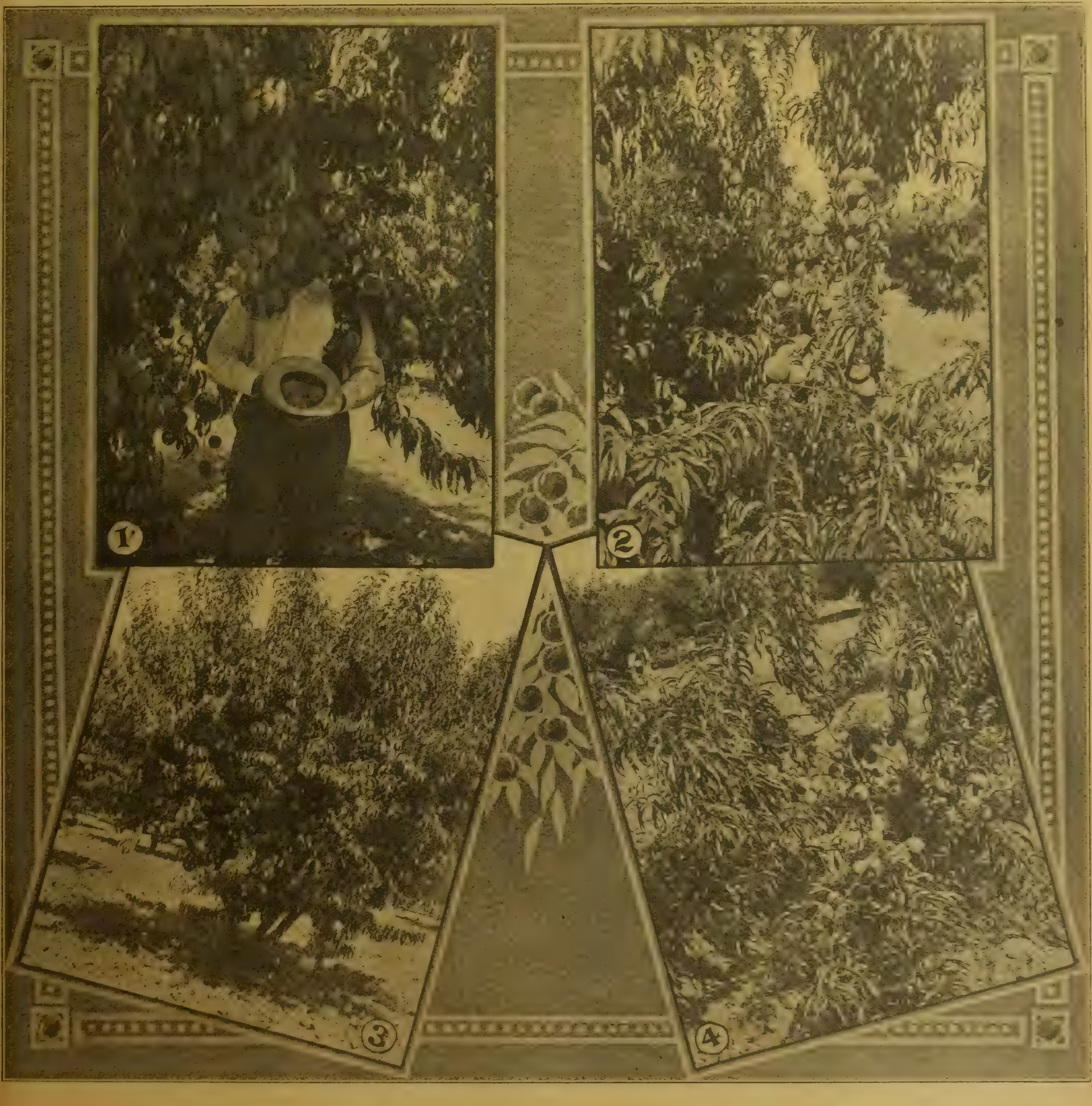
Rural Californian combined with California Cultivator

An Illustrated Weekly Magazine, Devoted to the Rural Home and Ranch

LOS ANGELES December 17, 1914 SAN FRANCISCO



Prune and thin your Peaches: 1. Peaches that are worth while. This tree has been thinned and the results are so apparent that no further explanation is necessary. 2. A demonstration of the kind of peaches obtained from a tree which has not been thinned. 3. A six-year-old tree which has been developed by proper methods of pruning. The low compact head with fruiting branches extending from close to the ground to the very top, obtained by a systematic method of pruning. 4. A three-year-old tree loaded with fruit running into the smallest sizes, and with practically all the frame work branches resting on the ground. Failure to prune has stunted this tree; its vitality is gone, and it is not very likely it will ever recover unless cut back very severely and forced to send out a new growth.

This Spring's Chance

in the

Sacramento Valley

Hundreds of prosperous and progressive farmers are already located in the upper part of California's great interior valley.

Have you ever stopped to consider what you could do on a farm of your own? Do you know that successful farm management calls forth the best that there is in a man and makes him utilize his foresight and ingenuity to a much greater extent than other work? Do you realize that the farmer works for himself and does not see some one else reap the benefits he himself has earned?

On the eastern side of the Sacramento Valley lies one of the most fertile tracts in the State. The fine deep loamy soil is waiting to produce the crops to which it is so admirably suited. An unlimited supply of water can be obtained by drilling a well a few feet deep. All that is needed is man's labor and brain to convert this district into one of the garden spots of California. Here one has the long, warm summers, which give ample time for any crop to mature, and the mild rainy winters store moisture in the soil for the following season's growth.

The successful farms already scattered throughout this district are fine examples of what the conjunction of ideal climate and soil, with intelligent labor will do. All sorts of fruits thrive here; banner crops of rice and alfalfa are produced, and the earliest vegetables and garden truck which come to the San Francisco market, are sent from this vicinity. Thousands of miners and lumber men and several large cities afford unlimited markets; two railroads near at hand facilitate disposal of the crops. Farmers' co-operative societies by parcel post and express and sending directly to market are saving more and more of the profits for the growers.

A 40-acre farm, properly planted, is better than any life insurance policy. Not only does it constantly produce an income during your lifetime, but every bit of work put into the place increases by just so much its permanent value.

Why close your eyes? Why not take steps to secure a home and farm of your own now? Why wait until it is too late?

It is our intention to get this district improved immediately. In order that there shall be as little delay as possible to the work we will drill a well on every forty acres and install a complete pumping plant, will furnish modern farm machinery, and supply fruit trees and seed to plant on the land. The land at present is all clean and ready for plowing.

Special Feature

This land is absolutely free from overflow; the titles are clear and guaranteed; there is no bonded indebtedness; there are no irrigation or reclamation assessments. You are buying good land, without incumbrances.

To make this offer still more attractive, we are placing these tracts on the market at a reasonable price—$150.00 per acre, the equipment included. If you want to obtain one of these farms in the early fruit district of the upper Sacramento Valley, write us for further details.

Dudley Moulton

Formerly Deputy Commissioner of Horticulture of California, Expert, United States Department of Agriculture.

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California Cultivator

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Vol. XLIII No. 25 LOS ANGELES: THURSDAY, DECEMBER 17, 1914 One Dollar Yearly

The Peach and How to Grow It

George C. Roeding Writes of the Value of One of the World's Finest Fruits; How It May be Grown and Best Methods of Caring for It

WHAT is the matter with the peach game? Is it overdone or is the present condition due to a series of circumstances which cannot be readily overcome? I am not going to delve into the history of the situation, for if I did I would only be raking over ground which has been thoroughly pulverized by other writers without making any suggestions to bring about a change.

If there is any one thing which rubs me the wrong way in dealing with facts, it is to put on the soft pedal, so to say, beat the air with words and really say nothing worth while. If there was ever a business in which the farmers are engaged in California, needing a good stiff punch right from the shoulder, it is this one game. It is only too true that cling peaches are maintaining a rather uniform price from year to year, with a steady demand.

When four cents a pound is the ruling price for dried peaches, it is useless to deny the fact that the producer is in the hole. Everybody cries "overproduction." The packers start the music going and the echoes travel last to the great consuming public, reverberate and rebound until the poor grower, coming in with the refrain, actually believes he has engaged in a business which is absolutely hopeless.

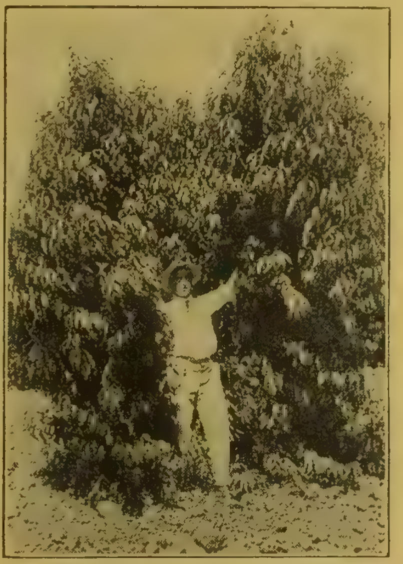
Let me ask you one question right here. Mr. Grower, do you think you are bettering your conditions when this state of affairs exists by going on year after year, putting out an inferior product because you say it doesn't pay to make your fruit better? Right here I want to say that your reasoning is all wrong, for it is just such uninviting stuff which influences the consumer to say: "Nay, nay, Pauline! this article does not appeal to me."

If the man who consumes your stuff refuses to buy because its appearance is against it, what prospect is there for better returns? He is the man you have to reach. How are you going to do it? By offering an article of food which is not pleasing to the eye? Correct this one fault and you will be surprised to see how quickly the situation will change.

Are you going to raise the level of your product by offering the same old artfcle year after year or are you going to be the first one to deliver the punch, and how are you going to go about it?

Peeled Peaches

When a man is engaged in a commercial business, if he is going to stick he realizes that he must induce the fellow who has the money to buy to head his way. After he has a taste of the stuff he has to sell he employs every legitmate means at his command to cause him to call for more. There is nothing wrong with the peach business except that the word "more" has been forgotten. Dried prunes and apricots are immense factors in the California fruit trade, why should peaches lag? What is wrong? The answer is "Nothing, except that fuzzy skin." It is just that one thing that curtailed our trade with Europe. The greater part of our prunes and apricots are exported, and this same market and our own should take our peaches if you remove the fuzz.



5. This young tree was planted in March, 1912, and demonstrates the remarkable growth obtained by severely cutting back. This tree was cut back to the point where the branches commence to fork, which you will notice is on a line with the man's belt.

You believe it, and so do I, that when this market was being vigorously developed three years ago, and dried peaches reached the very remunerative prices of nine and ten cents per pound, Europe was buying freely of our stuff.

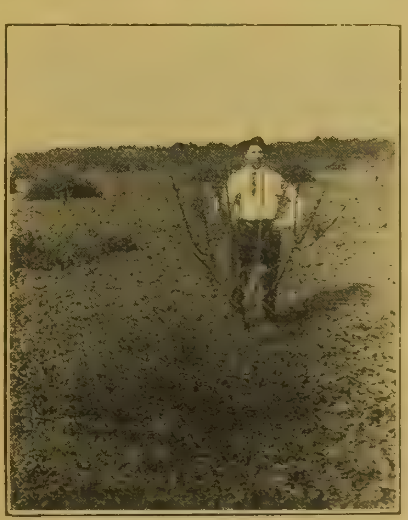
What stopped it? Not hard times, but simply that fuzz, to which our European friends made such serious objection that exports became very small. How many people would eat canned peaches with the hide on? Then what is the use expecting them to take them when there is no mitigating sweet syrup to neutralize this skin when the peaches are dried? In my opinion peeling of peaches will solve the problem of marketing. It is easily done. Even a small grower can do this work to good advantage.

All that is really necessary in the way of appliances is an ordinary prune dipper, in which one pound of lye is dissolved in 15 gallons of water. The lye water should be maintained at boiling point and the peaches, after being halved, placed in this solution for about one minute. The fruit should then be dumped into a tank of cold, clear water, which should be changed occasionally, when the skins will immediately slough off. The sulphuring of the fruit should be carried on in the usual manner employed for peaches not so processed, but should not exceed four hours. The sulphur bath is of sufficient duration when the syrup collects in the cup of the fruit. One important point which should not be overlooked in order to have a first-class dried article is to have the trays clean.

Experiments made with peaches treated in the manner described have demonstrated that the loss in weight is not as heavy as might be inferred. In an experiment made with Lovell peaches, in which the fruit was carefully weighed, the unpeeled peaches dried away from 100 pounds to 24, and the peeled to 16. In each instance the weight of the pits was eight pounds.

The first question the practical grower puts is, "What is there in it?" Well, to begin with, you are producing a palatable article of food, so much so that a peeled peach is just as good as a first-class canned peach. Even in this year of low prices for dried peaches, a few growers who have been engaged in peeling peaches in a small way have had no difficulty in selling their product at from 10 cents to 12½ cents per pound.

There are peach peeling machines on the market which are used by all the canneries and which it would be a decided advantage for the large growers to use. These machines will deliver the peaches on the trays without any handling except that the fruit has to be placed with the cups up.



6. The same tree properly pruned in December, 1914. Notice the branches, the wide open goblet shape and the general sturdiness of the tree. A tree pruned in this manner will not only make a fine growth, is full of fruit spurs and will support a heavy crop of peaches without being twisted out of stape like a tree allowed to send its branches upwards without any effort to check same and develop elbows as illustrated in the picture.

Pruning

It is the beginning of the end. "Why?" you ask. Simply this; it is the one particular phase of your education you are going to fight shy of. It is only natural that a beginner in the fruit business should want returns as quickly as possible from his undertaking.

What does he do? Leaves plenty of wood on his young trees. He usually has enough solicitous neighbors around who, if he does prune heavily, tell him he is ruining his orchard and might as well dig it up. What is the result? The accompanying pictures tell their own story.

I am rather forcibly reminded of the effect pruning severely makes on the average person's mind by an experience in which I figured as the leading man in pruning a few trees as samples in a two-year-old peach orchard which had been planted by a friend of mine at Gridley ten years ago. I was attending a fruit growers' convention at Marysville. It was early in December and, as a special favor, I was requested to visit the orchard and give the foreman a few ideas about pruning. It was then two years old. It had been pruned severely the first year and the trees had made a fine growth.

I had just finished pruning a few trees. cutting them back severely. when the foreman, who, by the way, was of Teutonic origin, drew the owner aside and in a voice which he evidently had tried to suppress into a whisper, but in his excitement utterly failed. remarked, with tears streaming down his face, "Mein Gott! Mein Gott! dat man vill kill our beautiful trees." My friend was obstinate, insisted that my instructions be followed. I had the satisfaction of learning from him, while discussing and laughing over the incident a year ago, that the orchard had not only made a most magnificent growth, but in addition to this had been a heavy and regular bearer of the very best fruit. There is no use quibbling about it, for it is an actual fact that lack of proper pruning primarily is the cause of much of the inferior fruit, both fresh and dried. which is offered for sale. Prune your peach trees every year and very severely for the first years anyway, to develop a strong, stocky tree with an abundane of laterals and a broad bearing surfae.

Don't prune for a lot of bean poles, with a few fruit spurs in the top of the tree; then complain that your orchard never pays. Just bear this one point in mind, that such pruning as we have to do in California calls for the exercise of good common sense.

In the nurseries of Europe yearling trees are very rarely sold. They are known as maidens until their training commences, and this sometimes extends over a period of from three to eight years before the trees are sold.

(Continued on Page 631)

Roeding's Service Guarantees Successful Results

PLANTING THE TREE
HARVESTING THE CROP·

FROM the planting of the tree to the harvesting of the crop is sometimes a long period, and you want to feel sure in the start that your trees will turn out to be what you expect—that they will produce extra fancy fruit, the kind that is always in demand and brings the highest price.

Of course the feeling of certainty rests most securely on him who plants GOOD trees—not "bargain lots." But in addition it is worth while to have someone, upon whose judgment you can absolutely rely, advise with you from time to time about the proper care of your orchard to bring the trees into bearing.

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Citrus and Tropical Fruits

THE AVOCADO SITUATION

By F. O. Popenoe Before State Nurserymen at San Diego

IN the beginning I shall assume that the avocado has come to stay. It is not supposable that a delicious fruit of the highest food value, which is found to flourish over a wide range of territory in this state, will be other than increasingly and extensively planted.

In Southern California from Santa Barbara southward fruiting avocado trees ranging in age from three to 30 years are to be found in quite large numbers. These afford a practical and acceptable demonstration of the adaptability of the tree to this climate and soil and of its fruitful character. It is not now a question as to whether we shall plant the avocado; it is only a question as to how rapidly the planting of good varieties may be proceeded with. This fact alone will determine the future development of the industry.

Propagation

Under this head as a first item may be mentioned the seed supply. By a ruling of the federal horticultural board it is now impossible to import seeds from Mexico where they have heretofore been obtained in large numbers. Neither can they be brought from the Hawaiian Islands. Importations may be made, I believe, from Florida or Cuba. Young trees grown from these seeds are too tender to satisfactorily work in this climate. Therefore the future development of the industry wil be dependent upon the seeds grown at home. Fortunately a fairly large number of Mexican seedling trees are coming into bearing in Southern California. These seedlings are sometimes wonderfully prolific. An eight-year-old tree at Azusa last year produced 5000 fruits, so I am informed by its owner, John Ott. This, I believe, breaks the record. But many such seedling trees are known to have grown 2000 or more fruits yearly. Thus, by another year or two, when a still greater number of such seedling trees are in bearing, the seed supply will be provided.

Attracted by the apparently high price at which budded avocado trees are selling, many people have been drawn into the attempt to propagate them. Not only have the nurserymen undertaken this, but as in years past when seedling orange trees were planted in hundreds of back yards, so also in the case of the avocado, many a man or woman with a taste for growing things and a desire to increase the yearly income has attempted the budding process. Almost without exception these undertakings have ended disastrously. Not only amateur, but experienced nurserymen, have found the budding of this tree difficult, and the number of failures may be compared to the number of failures in gold mining. In our own work at the West India Gardens where we have budded thousands we feel that while we have learned some things we are yet on the threshold and have still a large number of things to learn.

THE NORTHRUP AVOCADO, TYPICAL OF THE THIN SKINNED MEXICAN, HARDIEST VARIETIES

The two vital points are the condition of the seedling stock and the suitability of the bud. The time of the year matters little and is provided for in the statement "conditon of the seedling stock." The sap must be flowing freely. The bud varies greatly with the different varieties so that it is impossible to lay down a rule. The right bud to use can be learned only from experience. In some varieties it may even be said hat the buds are never first-class. In such cases failures are always numerous. Unfortunately this applies to some of the varieties most worthy of propagation.

After the bud forms a union with the stock, the treatment is a simple one—merely keeping it in vigorous growth by topping back and suckering the seedling stock. Cutting off the old stub at the wrong season of the year is the cause of some loss. This should be done preferably in winter when but little sap is flowing, otherwise one is likely to induce a "dieback" which is not easily checked and often goes below the bud.

Field grown trees are by far the most desirable, budding into pots, boxes and cans can be done and is the method largely followed in Florida, but is only partly successful in California, perhaps on account of our drier climate.

Loss has been sustained in the past by planting young and tender trees in midsummer. The ideal planting season, I believe, is the month of March.

A TYPICAL SPECIMEN OF THE LARGE FRUITED, THICK SKINNED COMMERCIAL AVOCADO

The avocado likes cool weather and its root growth begins early. Thus by early planting a tree wil become established and have an opportunity to harden its wood before the heat of summer.

Young trees planted in orchard form should be preferably 30 by 30 feet or 50 to the acre. They grow considerably larger than budded orange trees. For the first year or two double the number of irrigations given an orange or lemon orchard will be well repaid by the vigorous growth of the trees. Needless to say thorough cultivation must be maintained.

Varieties

All avocados are good. I have seen many thousands of them and have never found one that I could not enjoy eating. Like all good things, however, some are better than others and fortunately we have growing and fruiting in Southern California some so good as seemingly to leave nothing further to be desired. Yet to say that any one of these will be the ultimate standard for California growers is to make a statement that may need future modification.

The varieties may be sharply divided into two classes, the thin skinned and the thick skinned fruits. Of the former it may be said that they, as a class, are the most prolific and best flavored. Reference has already been made to the tree of John Ott that produced 5000 such fruits last year. These fruits weighed perhaps four ounces each and were good eating. Here we have 1200 pounds of food containing a high percentage of oil. This would give one person a pound for every meal during the year if the fruit would keep so long—which it will not of course, but the statement illustrates the point.

An analysis made by the University of California of the Chappelow variety, another of the thin skinned type, furnishes the astounding fact that the total edible portion (that is, the entire fruit exclusive of the skin and seed) contains 29 per cent fat. Here is a subject for the consideration of food specialists. The Chappelow this season is bearing a crop of two or three thousand such fruits, each one weighing from five to seven ounces.

The Panama Canal and The California Fruit Grower.

P-A-N-A-M-A C-A-N-A-L spells, to most people, merely Panama Canal, but to the California Fruit Grower it spells OPPORTUNITY, for fruit can now be shipped, via the Canal, to the Atlantic Seaboard, at

A Saving of 60% or More

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BE PREPARED BY PREPARING NOW.

Increase your acreage. Plant more trees—thrifty Foot-Hill Grown Trees, with their good root systems, hardiness, and freedom from disease—the Silva-Bergtholdt kind.

As to which are the best and most profitable varieties for this new world-wide market, and the wonderful possibilities of this great Opportunity, are discussed thoroughly in our new Catalog and YEAR BOOK —Send for your copy TO-DAY.

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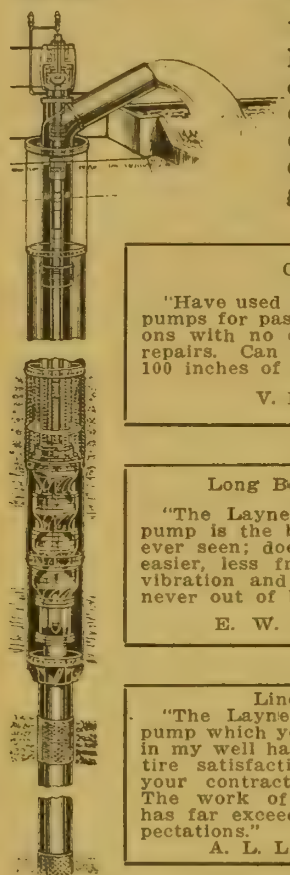
What a Few Owners Say
ABOUT THE
LAYNE & BOWLER PUMP



We give below several extracts from letters received from users of the Layne & Bowler Pump. We have hundreds of such letters on file. Send today for our Catalog No. 30. It tells how you can produce the cheapest water and gives valuable irrigation data.

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"Have used one of your pumps for past two seasons with no expense for repairs. Can easily pump 100 inches of water."
V. E. WIRE.

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"My Layne & Bowler pump has run through the season and has done perfect work. I do not hesitate to tell everyone it is the best pump on the market."
F. C. LILLIE.

Long Beach, Cal.
"The Layne & Bowler pump is the best I have ever seen; does its work easier, less friction, less vibration and noise, and never out of balance."
E. W. SPEARS.

Los Angeles, Cal.
"With the Layne & Bowler pump we are pumping about 40 inches more than we expected to get. I consider it the best pump for irrigation."
PERCY H. CLARK.

Lindsay, Cal.
"The Layne & Bowler pump which you installed in my well has given entire satisfaction as per your contract with me. The work of the pump has far exceeded my expectations."
A. L. LAIDLAW.

Van Nuys, Cal.
"I have always been a booster for your pump and it has given me all the water the well will supply at a depth of 118 feet. What more can a pump do?"
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2
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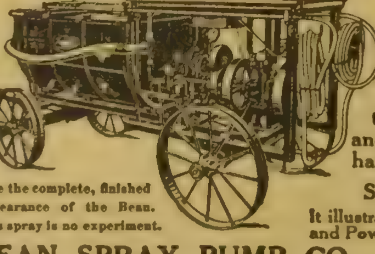

—drive the material on at high pressure and have non-rusting ball valves, porcelain-lined cylinders, Bean patented pressure regulators and many other distinctive advantages. On account of their low-down, compact, perfectly balanced construction they are as easily handled on hilly ground as on the level.

Note the complete, finished appearance of the Bean. This spray is no experiment.

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Thus the thin skinned varieties may be said to be ideal for home use and fortunate indeed is he who may have one or more of them growing in his yard.

But it is to the larger fruiting and thick skinned varieties that we must look for our commercial avocados. Giving all due credit to the thin skinned varieties, I believe it is reasonable to say that as compared with the larger, thick skinned fruits they are not to be considered from the standpoint of the commercial grower. While these latter fruits fall a few points short in oil content, their other qualities more than overbalance this for the grower who is going to sell his product. While there is no valid reason for it, nevertheless it is a well understood fact that it is a characteristic of human nature to select the larger of any two things. This may be because we are all selfish. The higher price will always go to the large fruits and it will not only be a higher price, but it will be a price higher in proportion to weight—one large fruit perhaps selling for the price of four small ones even though the four small ones may weigh twice as much as the one large one. The thick hard skin of the Guatemalan types permits of successful transportation to any distance, so far as our own country is concerned. Besides this the larger fruits peel, slice and serve more attractively. This in brief is a comparison which I have tried honestly and conservatively to make.

Now as to individual varieties. We have heretofore ranked the Taft, grown by C. P. Taft of Orange, as the leader. It is a fruit of good form, fine appearance, ideal weight (about one pound) and of very satisfactory quality and flavor. The remarkable feature is that the fruits remain a long time on the tree in good condition. Mr. Taft has picked marketable fruits in April and has allowed others to hang on the tree until the folowing October. I know of no other variety which will carry its fruit for such a long time. The Taft has not yet produced fruits in sufficient quantity to enable us to say that it is up to the mark in productiveness. Mr. Taft, who is a conservative and conscientious man, believes, however, and in this I agree with him, that the immense amount of budwood cut from the tree to supply the demands of those propagating it is a reasonable explanation for this apparent deficiency.

Blakeman.—This is an eight-year-old tree growing at Hollywood and is in its second year of bearing. Last year its production was approximately 50 fruits; this year from 150 to 200 are hanging on the tree, making a most beautiful sight. In form and appearance, the Dickey fruit may be ranked as de luxe. As to flavor and quality the words de luxe are hardly enough. As the Englishman would say, it "wants beating." In the matter of propagation it may be said the young tree grows vigorously and handles well. The fruit matures in the spring and is green in color.

The Lyon.—This variety has the very desirable quality of ripening its fruits early, a thing much to be desired. Its season may be classed as February and March. It is of good size, form and quality, prolific in bearing and worthy of extensive propagation.

Challenge.—As the situation stands today we must all take off our hats to the Challenge. This tree is owned by J. H. Walker of Hollywood. It is perhaps 17 years old and has been fruiting for possibly ten years, with a gradually increasing yield which has reached this year the high water mark, —approximately 2500 fruits which will begin to ripen in February and will at that time average one pound in weight. The owner is just now spending $125 for a system of supports to prevent the crop from breaking down the tree. The value of this crop to Mr. Walker will be approximately $800. After it has passed through the hands of the retailer this sum will have increased to at least $1200. The prospective planter who desires to compute his future income from 640 acres can now get to work. If, however, he will begin by throwing off 15-16 of Mr. Walker's income from the Challenge this year and estimate $50 per tree and 50 trees to the acre, he will have a return that should be satisfactory to him and one that I honestly believe he can realize.

So much for some of the thick skinned, large fruiting commercial varieties. Space forbids the mention of the Sharpless and others. As for the thin skinned, small fruiting kinds, the Chappelow, Carton, Harman, Ganter, Blake and Northrop will afford a range in form and size that will satisfy every fancy.

Orchard Planting

While details of commercial plantations are somewhat dry, I desire to place on record the following data as serving to establish the growth of the industry. In passing it may be remarked that orchard plantings would have been at this time greater in extent had it been possible for the rancher to have procured a larger stock of budded trees. So far the supply of good budded trees has been unequal to the demand, and my own opinion is that this condition will prevail for several years.

	Acres
Magnolia Nursery, Whittier	8
A. L. Rideout, Whittier	20
West India Gardens, Vista	26
A. W. Martin, Vista	5
Arlington Hts. Fruit Co., Riverside	10
W. J. Hole, Arlington	10
Mrs. J. T. Stewart, San Fernando	5
C. P. Taft, Orange	5
Dr. W. R. Manning, Fillmore	1
Oscar Maurer and Dr. C. W. Fish Delmar	5
W. A. Spinks, Monrovia	5
E. S. Thacher, Nordhoff	10
Mrs. Briggs, Etiwanda	10
James H. Shedden, Monrovia	5
Edwin H. Hart, N. Whittier Hts	20
Joseph Sexton, Goleta	several acres
Dr. Rudolph Schiffman, Pasadena	several acres
Dr. Chas. L. Bennett, Covina	4
H. B. Ainsworth, Arcadia	2
Judge Chas. Silent, Glendora	1
G. W. Wilder, Redlands	2
Geo. H. Ennis, Riverside	several acres
L. B. Cadwell, Carpinteria	1
Bangor Development Co., Butte County	several acres
Chas. D. Adams, Upland	2
R. W. Camp, Sierra Madre	1
A. M. Chidester, N. Whittier Hts	1
A. N. Collins, Riverside	3
A. A. Davis, Alhambra	1
H. H. Ford, Redlands	several acres
H. L. Hazeltine, San Fernando	1
Geo. N. King, Fillmore	2
E. E. Knight, Yorba Linda	5
John H. Lindley, Covina	2
Schnabel Bros., Newcastle	1
J. T. Whedon, Yorba Linda	5
C. H. E. Hardin, Ocean Park	3

Plant Pears for profit. California Bartlett ripen earlier than Eastern and Northwestern grown pears. During their season they monopolize the markets of the United States and Canada.

Silva-Bergtholdt's
FOOT-HILL GROWN PEAR TREES
are practically immune from blight and have strong, hardy root systems; the foundation of all successful trees.

We have a fine stock of Bartlett, Comice, Winter Nelis, Anjou and other varieties. Our buds are cut from selected parent trees.

THE SILVA-BERGTHOLDT CO.
"Fruit Tree Specialists"
P. O. Box A Newcastle, Cal.

Henry J. Kramer, La Canada	2
Rear-Admiral H. N. Manney, Point Loma	½
D. A. Carton, San Fernando	2
Utt & Stevens, Tustin	5

It is also known that extensive increases are being planned by nearly all of the above growers and that contracts have been placed for next spring's delivery for trees to provide for new plantations of from five to forty acres in various localities.

SYRUP FROM APPLE CIDER

Recently the office of information, United States department of agriculture, released a paper on "Discover Way to Make Fine Table Syrup From Apples." The patent applied for is in the interest of the public and is believed to be of value in utilizing undesirable or unmarketeable apples.

The paper containing the information shows that the syrup is made from apple cider and that one gallon of sirup is obtained from every seven gallons of cider. In some respects the syrup is similar to cider syrup that was known to us 20 years ago. In other respects this syrup is similar to cider butter.

Inasmuch as the new process was designed chiefly for the cider mill or other manufacturer who desires to manufacture and sell cider syrup, the question immediately arose as to whether or not such a process would be feasible. From the home manufacturer's point of view the introduction of milk of lime (slaked lime suspended in water) did not appear practicable because it would be difficult to teach the average person the right amount of milk of lime to use. As outlined there is another objection in that the addition of water contained in the milk of lime dilutes the cider and consequently increases the time for the concentration of the cider to the proper consistency.

Taking these objectionable features into consideration, Professor Geo. Olson of the state experiment station at Pullman, Washington, has modified the original process in such a manner as he believes will make it of practicable use to not only the cider mill but also to the housewife. Whatever changes have been made in the process it is hoped that it will not modify the patent in any way whatsoever. With this understanding, any one who desires to make sirup according to the modified method does so without infringing upon anyone's personal rights.

The modified process as worked out at the Washington state experiment station chemical laboratories (lime carbonate) is used in place of milk of lime and an untreated boiled apple cider is used to render the chalk treated cider slightly acid.

The ample addition of milk of lime or precipitated chalk changes the coloring matter in apple cider to an inky color. Lime also tends to impart a chalky flavor. Its chief use, however, is to neutralize the malic acid in the cider and form what is known as calcium malate.

The difference in the use of milk of lime compared with precipitated chalk is in its limits of reaction. The milk of lime must be cautiously added so as to avoid an alkaline reaction, otherwise more cider will have to be added until the color of the liquid returns to an amber one. This moving from the alkaline to the slightly acid is not easily accomplished and in the hands of the average person may make a product varying more or less in flavor. On the other hand, precipitated chalk will react with the acid in the cider to form a neutral product (neither acid nor alkaline) and which is easily made slightly acid according to the following instructions:

For every 100 pounds of cider add one-half pound (ample in most cases) of precipitated chalk or enough more to make the treated cider take on a bluish to blackish color. Boil the cider for five to ten minutes and filter while hot. Collect the filtered material into open kettles or pans, add five pounds of boiled and filtered apple cider that has not been treated with lime carbonate. Boil again until the cider has reduced to one-seventh its original volume, then filter under pressure. The sirup formed is "distinctive" in flavor and appearance.

Peaches $10,000 Worth — 400 Tons from 900 Trees in Six Years from Planting

Read This Letter from C. H. Schmidt of Selma, Cal.:

Selma, Cal., Nov. 14, 1914.

Mr. Geo. C. Roeding, Pres. and Mgr. Fancher Creek Nurseries, Fresno, Cal.

Dear Sir:—

I think you will be interested in a brief outline of what I have accomplished with the peach trees which I purchased of you in 1908.

In the first place, the trees that you supplied me with were just the kind of nursery stock that I know Roeding invariably supplies to his customers. I am only one of the many boosters you have through the West who can point with prideto Fancher Creek Nursery grown trees which have created a standard of their own through the exceptional care and thought you have given to the perfecting of all your stock.

The very fact that I had the right kind of a start and in connection with this, that I gave proper attention to the matter of pruning, cultivating and fertilizing has, in a measure, contributed to the very satisfactory results which I have succeeded in obtaining. You have visited my orchard from time to time, but I do not believe you have ever fully realized the success I have met with.

My orchard is now six years old and up to and including 1914, I have delivered from the 900 trees, 400 tons of peaches and have received for the same the tidy sum of $10,000. If I do say it myself, I think there are very few orchardists who can make a more favorable report than this.

Only recently I measured a few of these trees and I was very much surprised to find that they average from two to three feet in circumference a foot above the ground, while neighboring orchards, planted on the same character of soil, ten years of age and older, would not average over one foot in circumference.

I think I have demonstrated very fully that any fruit grower who will secure quality trees to begin with, such as you always furnish, and will put the proper thought into the care of them, will meet with the same result that I have obtained. I want to take this opportunity of thanking you for the advice that you have given me from time to time, and I want to say further that it is this kind of service which does not end after the sale of an article that is appreciated.

Yours truly,
(Signed) C. H. SCHMIDT.

Roeding's

True Trees Yield Profitable Crops

FOR over 30 years we have been growing nursery stock in California. Our nurseries are located in the most desirable spots, under ideal soil and climatic conditions. We grow everything that grows—fruit and ornamental trees, vines, shrubs, plants, etc.

Write Us for Prices

Get in touch with us at once as to your probable requirements for this season's planting. Send us your list for prices and suggestions. We will be glad to advise with you free of charge.

Fancher Creek Nurseries

Paid Up Capital $200,000
Geo. C. Roeding, Pres. and Mgr.

Box 12, Fresno, Cal.

The Old Reliable

San Dimas Citrus Nurseries

Established 1890
Incorporated 1913

Citrus Trees Exclusively

All Leading Varieties

REMEMBER, MR. PLANTER

Practically anybody can grow a citrus tree, but it takes years of experience to produce a tree that will prove a money-maker when it comes into bearing. Nice-appearing nursery trees are desirable and promising, but do not always prove to be good bearing trees in the long run. Plant for profit and not for appearance only. Our trees are straight, thrifty, well rooted and have strong, full heads, but the main consideration is that: Our buds are carefully selected from heavy fruiting trees and will prove true-to-name revenue producers.

OUR TWENTY-FOUR YEARS

of experience in the growing and handling of citrus nursery trees gives the buyer the advantage of starting out RIGHT, thus avoiding disappointment at the end of four or five years' labor in bringing the young orchard into bearing.

ANOTHER POINT TO CONSIDER

Growing a good tree is only part of having it do well after planting. Many a good tree is ruined in the taking up from the nursery and shipping. We give the best of service in the proper handling and delivering of our trees.

WRITE,

'phone or call on us before **buying your trees.** Tell us your wants and we shall be glad to give you the benefit of our wide experience as to planting, soil conditions, fertilizers, etc.

Our illustrated new booklet on citrus culture mailed to any address upon receipt of 25 cents.

QUOTATIONS
GLADLY
GIVEN

San Dimas Citrus Nurseries

(INCORPORATED)

Established in 1890 by R. M. Teague

**San Dimas
California
U. S. A.**

Teague trees are started right, grown right, and shipped right.

General Agriculture

HOW TO MAKE THE SUGAR BEET A PAYING CROP

Written for California Cultivator
By Percy L. Edwards

To get the best results from the sugar beet crop it is essential that lands to be used for the crop shall be properly fertilized and there be some system of rotation with other crops. All of us understand the importance of humus in the soil. In a general way we know what humus is. It may suffice to say that humus is a vitalizing element and is necessary to thrifty plant life. In this way the necessity of furnishing this element to the soil is easily understood. Sugar beets are heavy feeders and the soils in which they do best must necessarily contain plenty of plant food. Fertilizing the soil is, therefore, a subject of great importance to beet growers.

Common Fertilizers Best

The common fertilizer more in use than any other, and which is at the same time the best of all, is barnyard manure. Next consider green crops plowed under long enough in advance of seeding to permit of decay and taking the form of humus in the soil. Chemical fertilizers are to be used not so much for their plant food value as for a tonic. Chemical fertilizers are valuable, there is no doubt, used for this purpose. It may be that some of the so-called chemical fertilizers now manufactured go farther and furnish some plant food, but the high price of such fertilizers will restrict their use in the best lands. The writer has used chemical fertilizer to good advantage in getting an early start and a good stand. After that the beets had to depend on the plant food stored in the soil. This experiment was made on sandy soil with a heavy, moist, underlying soil several feet beneath the surface soil. The result was fairly good. It was a second crop of sugar beets on same land. In the long run it may now be said that no kind of soil improver can be used to the exclusion of others if we hope to increase the fertility of our soils to the fullest extent and to reap the greatest profit from our labor. Stable manure is indispensable, but there are few farms on which enough manure is produced to maintain soil in the best physical condition and to replace the elements removed by the former crop. For this reason, partly, every rotation system, and there should be a rotation system about all farming operations, should include one crop to be plowed under, commonly called a cover crop. Whether the primary object of this crop be to increase the vegetable matter in the soil or, in addition to this, to increase the nitrogen content of the soil, will depend upon the particular conditions of the lands, and selections of this crop should be governed by these conditions.

If vegetable matter for the soil is the main consideration, then such green crops as grain, vetch, etc., in fact any vegetable matter that will easily decompose, may be plowed under for this purpose. But where more nitrogen is needed some leguminous crop such as alfalfa, clover, peas and the like should be used. The writer is aware that alfalfa will not be plowed under so long as the hay crop is profitable; also that the cost of the seed for cow-peas and, in fact, most of these nitrogen producing crops, is a bar to their use except in a restricted field. But if the result justifies the expense of using an expensive cover crop before a crop of sugar beets, that fact must govern in determining what course to follow. Vegetable matter in the soil is so essential to its productiveness, and the soil is so liable to lack in this essential that a constant application of some form of manure can not be too strongly emphasized. Briefly stated, the presence of vegetable matter in the soil puts plant vitality into the soil. A soil deficient in vegetable matter is said to be dead. This is literally true. In such soil it is utterly useless to sow seeds of any sort. The aim must be to supply the soil with sufficient plant food in the shape of decomposed vegetable matter, air, and moisture. With these elements in any reasonable proportion there is no surer result in any venture than in farming the soil.

The elements of phosphoric acid and potash in the soil are not increased by the use of green manures or by crop rotations. But whatever of these two elements are present in the soil they are made available by such means as we have called attention to. Whatever of potash and phosphoric acid are lacking in the soil may be made up in the use of commercial fertilizers. These commercial fertilizers should be used intelligently. In order that such fertilizers be used to best advantage soil analysis should precede their application. It is obvious that the ordinary farmer is not equipped with the means of determining just what his soil needs in the form of commercial fertilizer. The government at Washington and the state institutions are showing an interest in this matter of soil analysis and together with agricultural publications are undertaking to give this information to farmers. It is of more than ordinary interest to growers of sugar beets.

Advisable Crop Rotation

Every good farmer realizes that the best results are obtained with all crops when some well planned crop rotation is practiced. Now and then we hear of a successful one-crop farmer, but he has always been the exception. In the same class is the farmer who raises several crops but continues the same crop on the same land for several years. Both these methods are antiquated. They have been attended with a great deal of risk on account of the propagation of pests of many kinds. The soil may be rich enough in vegetable matter to stand the strain, but the continuous cropping to one plant seems to induce a condition favorable to insects, fungi and the like. Each particular pest flourishes best on some particular crop. The scab which affects white potatoes, a fungous disease, is propagated in this way Sugar beets following potatoes have been affected by this disease.

It is important that the rotation of crops be systematic. No rule can be laid down for the farmer to follow in this case. The individual farm must have a system adapted to its requirements. There are some principles of a general nature which should be borne in mind in planning a rotation system in sugar beet growing. For instance, the crop preceding the beets should be of such a nature that it may be out of the way in time for preparation of the land for the beets. Fall plowing is the thing for a beet crop. In California some beet seeding is done in December, but by far the greater acreage is seeded in February and March. If the land is plowed in November, or earlier if fit, this will give several months for the plowed land to be exposed to the natural elements. Crops preceding and following beets should be of such a character that they will not serve as food for the same pests that attack sugar beets. For example, land used the year previously for Indian corn would, as a rule, be admirable for the sugar beet crop following. Potato land, where the soil has not been too frequently used for the potato crop, is excellent land to rotate to sugar beets. Grain lands, especially wheat lands, are more generally used than any other land for beet crops, at least in California. If bean lands are used the better practice is to follow the bean crop with beets. If then a nitrogen producing crop is seeded on this land it will be kept in the best condition for another succession of the same crops.

Where sod land is plowed under for sugar beets it should not be used until such a time as the sod has become rotted and entered into the soil composition. In this case also there will be extra work required to get rid of the weeds and grass which usually are present in the sod turned under. Time should be given for this growth to show up and then care used in chopping up the growth thoroughly with disk and harrow so as to rid the ground as much as possible of weeds before seeding. But this is a problem which does not trouble California farmers so much as in other parts of the country. Our sod lands are limited. As a rule it may be said sod lands should not be used for beet seeding the same season they are plowed.

As sugar beets rotate with the grain crop, so will the grain crop profitably follow the beet crop. Without any exception, so far as the writer has had experience, when the grain crop follows sugar beets, the yield in grain has been materially increased. In some cases this percentage of increase has amounted to quite 50 per cent of the original yield. Oats, especially, do well following the beet crop.

On some of the heavier and richer lands, where deep plowing has been resorted to, a second crop of beets may follow the first crop. In this case it is well to plow under all the beet tops left from the previous crop. As a rule, stock is turned into the beet field as soon as the harvest is over, for the purpose of feeding them on the beet tops which make such a valuable fattening food that stockmen are willing to pay from $2.50 to $5.00 per acre. The land receives a benefit in any way you look at this. But a better plan is to plow under the tops and restore, in part, what has been taken from the soil. This second crop sometimes will show a yield in beet tonnage in excess of the first crop, if the conditions are the same. A third crop should never be attempted on same land in succession; a second crop rarely. Following a second crop the land should be liberally supplied with vegetable matter and a nitrogen producing cover crop. The writer would suggest seeding to alfalfa.

In this connection beet growing farmers should be informed that at the several factories each campaign there is an accumulation of waste lime which beet growers may obtain for little expense above hauling to the land. This waste lime makes an excellent corrective to injurious acid conditions of the soil and at the same time an important plant food. For in this lime there is usually from three to four per cent of nitrogen, four to five per cent of phosphates and upwards of ten per cent of organic matter. From this it is seen that this waste lime, liberally offered by the factory management, to its growers, is a valuable fertilizer for their lands at a merely normal price.

Concluding this subject, the writer hopes he has made plain the following necessary points to be observed in making the sugar beet crop a profitable one:

Select the field with reference to its fitness in surface and subsoil conditions, drainage and the previous crop.

Plow deeply and thoroughly in the fall.

Make a firm, clean and deep seed bed.

Plant early in the spring as soon as soil and weather conditions are right.

Use plenty of seed to insure good stand, and plant shallow.

Cultivate as soon as rows may be traced across the field, being careful to keep weeds down and the dirt from covering the young beets.

Begin thinning the rows as soon as the fourth leaf appears, spacing about eight inches apart and leaving the thrifty plants.

Keep the cultivator going as long as possible. Keep field free of weeds.

If irrigation is necessary do not flood the fields so that water stands on the surface in the sun.

Rotate with other crops calculated to improve soil conditions as well as to produce crops.

CARE OF EQUIPMENT

Written for California Cultivator
By Sacramento Valley Contributor

There are a number of farmers in the Sacramento Valley who are as careful of their farm machinery as the most successful manufacturer is of the tools and machines in his factory or shop. In fact these farmers might well be called manufacturers for they are in the business of manufacturing food for the human race, the most important industry in the world today.

A farm machine, a plow or disc or seeder or even a shovel, is a part of the working capital of a property. If a farm is considered a business proposition, as it should be, a certain percentage of the value of each piece of equipment must be deducted from the proceeds from the farm each year before the net profit is arrived at, in order to provide for the replacement in in few years of worn-out machinery which is now part of the capital stock of the business. If a machine costs $100 and will be worn out and need to be replaced in ten years, one-tenth of its value, or $10, should be charged off each year for depreciation in figuring what the business has made.

Most farm machinery is used for but a few days a year, so that if it is in good repair and adapted to the work it is used for, that is strong enough and properly made, it should take many, many years to wear it out so far as the actual wear of the principal parts, frame work, bearings, boxes, etc., are concerned. If, for instance, a machine is made sufficiently durable to permit of its being run continuously, as a machine would be in a factory, for five years, and the average work on a farm would require the services of that particular machine for one month of the year, it should be possible, theoretically at least, to use it on a farm for 60 years. In actual experience machines have been known to be in good repair and working order at the end of 40 years on a single farm, but these cases are very rare indeed.

The principal reason for the short life of most farm machinery is neglect and exposure to the elements, but another is that so many improvements have been made during the past few years that it has often been found economy to discard old machines and buy new ones that will do work more quickly and effectively and cheaply even though the old one was not worn out.

Then the average owner or manager of a farm is generally not much of a mechanic and he is therefore not able to adapt an old machine to a new use by rebuilding it.

So that even if it could be conclusively shown that care of machinery could easily effect a saving of many thousands of dollars to the farmers of a state—and there is no question but that it could—and if this was to happen less farm machinery would have to be made and sold. Still manufacturers of farm machinery have little to worry about on that score because the average farmer will be the average wasteful, careless man for years to come, perhaps forever, and money that might be saved and turned into his profit account will continue to go to farm machinery manufacturers. The best that can be hoped for is that some one who reads this may be started to thinking along a line that had not before occurred to him and that it may be the means of increasing some individual incomes. And as far as the machinery manufacturer is concerned the demand for staple articles is constantly increasing because of new lands being put in cultivation, and all farmers are always in the market for any improved tool or implement that will make money in additional crops because of better preparation of the land or that will save money in lessened labor.

Read our guarantee of advertisements in the editorial heading and then proceed, without any hesitation, to deal with our advertisers. We believe they are all right. We have guaranteed them to be all right. Go to it.

To care for machinery should be a genuine pleasure to a real farmer, one who loves the work and takes delight in the proper conduct of the business and the making of money. It should be a source of pleasure and satisfaction to know that every piece of machinery is in its place, protected from the weather and easily accessible when needed, that every ball in it is tight, that every wearing surface is protected by grease or paint, that every place that should be sharp is sharpened, that every piece of framework is protected from rust or decay by a good coat of paint, and that in the doing of this the life of the implement has been lengthened and money made because money has been saved.

"THE HIGH COST, ETC."

The high cost of living which is such an interesting topic for women's clubs and all the rest of us has some comfort when reading reports in London a hundred years ago.

The Globe for March 16th, 1814, contains the following interesting record:

"The extreme severity of the weather has rendered all the fruits and vegetables of the season scarce, and consequently dear beyond all precedent. The following is the state of the prices on Saturday:

Asparagus, £1/11/- per hundred.
Cucumbers, £1/1/- per brace.
Best Pines, £2/12/- each.
Grapes, £3/3/- per lb.
Endive, 8/- per dozen.
Best Broccoli, 16/- per bundle.
French Beans, 8/- per hundred.
Mushrooms, 5/6 per pottle.
Best Kale, 12/- per basket.
Nonpareil Apples, 8/- per dozen.
Colmar Pears, £1/10/- per dozen.
Coss Lettuce, 4/- per dozen.
Mint, 1/6 per bunch.
Greens, 16/- per dozen bunches.
Spanish Onions, 12/- per dozen.

It would be comparatively easy to escape the colic at a "pun" per "brace" for cucumbers.

We are not surprised that some readers, even of this paper, are a bit "leary" of advertising. Every little while we read of swindles perpetrated through the mails on victims that are reached by advertisements. Don't be alarmed about these reports. We will concede to you that too many of them are true, but the victims are not solicited through the columns of this nor any other reputable farm paper. We are seeking, both by precept and example, to teach our readers that every advertisement in these columns is genuine. In any event, we would have you to remember that our guarantee stands back of every name and claim appearing in our advertising columns. Read the guarantee in the editorial heading.

$200 to $300 an Acre
From a Walnut Grove

in full bearing is not unusual and many groves are producing even more. There's money in Walnuts.

MAYETTE! True Wiltz Strain! For productiveness, freedom from blight, and wonderful Quality, the Wiltz strain of Walnuts has no equal in any other of the standard varieties. Late Bloomer.

FRANQUETTE! True Vrooman Strain! Next to the Wiltz Mayette, the best Walnut for Northern and Central California. Late Bloomer.

Our Scions of Franquette and Wiltz Mayette, cut by R. Wiltz, a pioneer Walnut grower, are not only absolutely true to the strain, but are from selected trees. They are the best.

Write Us First

The Silva-Bergtholdt Co.
P. O. Box A Newcastle, Cal.

We again solicit the fruit tree and vine orders of the planters of the West, knowing that nothing but the **Best** will satisfy the experienced buyer. Twenty-eight years of successful nursery business has proven the quality of

KIRKMAN TREES

and the treatment Kirkman accords his customers. Our steadily growing patronage has demanded that we grow more stock each year, until we now have more than **five million** trees and vines growing in our nursery plants in California and Arizona. A considerable portion of the stock in our nurseries, which will be ready for delivery this coming winter and spring, is already sold to early customers, but we still have a complete stock of all varieties of fruit trees and vines, as well as a general assortment of **ORNAMENTAL** and **SHADE** trees, etc., etc. What are you going to plant? We have it, without doubt, in large or small quantities. Illustrated price catalog on application. Please mention what varieties you are expecting to use.

KIRKMAN NURSERIES 2525 Tulare Street, Fresno, Cal.

Cherry Trees

Cherries are the first, the most attractive and the best fruit of the summer season. This, together with the fact that they are very profitable, yielding from $400 to $600 an acre, makes them a good "buy" for any fruit grower in position to raise them.

Our block includes Bing, Black Oregon, Black Tartarian, Burbank, Royal Ann, and other good varieties on Mahaleb and Mazzard Root. Write Us First.

THE SILVA-BERGTHOLDT CO.
"Fruit Tree Specialists"
P.O. Box A Newcastle, Cal.

Martinez Nursery
Established in 1884
T. S. DUANE, Prop., Martinez, Cal.
All leading varieties of fruit and ornamental trees.
GRAPES, ORANGES and LEMONS.

Trees Trees
French, Imperial and Sugar Prunes, Bartletts, Clings and Freestone Peaches, Plums, Almonds, Apricots, Figs, Apples, Grafted Walnuts, Grafted Resistant Vines, Rooted Table Grapes, Spineless Cactus. Special prices on application.
TABLE GROVE NURSERIES
Healdsburg, Calif.

Grafted Walnut Trees
ON BLACK ROOT
Eureka, Placentia Perfection, Neffs Prolific
Select Pedigreed Scions
FRANK B. McMILLAN Alhambra, Cal.

The California Cultivator is unexcelled as an Advertising Medium

Economics on the Farm

DON'T DESTROY THE INITIATIVE

THE Farmers' Protective League of California is advocating amendments to the election law to prevent the misuse of the initiative to the detriment tiative to the detriment of the material progress of the state. The league makes this announcement:

"The Farmers' Protective League endorses the principle of direct legislation, as do all who are in sympathy with the forward movement. But this organization also takes cognizance of the apparent looseness of the law which permits an inconsiderable number of persons placing upon the ballot measures having alluring titles and containing attractive promise, which threaten the progress and prosperity of the state because their real purpose is not revealed.

"Recognizing the need of a safety valve on the initiative the Farmers' Protective League will urge that the law be amended, and recommends:

"First. That all initiative petitions, duly sponsored, shall be kept available for signatures only at the offices of the registrar of voters or county clerks of the various counties where citizens may sign same during regular business hours; or petitions shall be kept at places where county clerks or registrars maintain offices for purposes of registering eligible voters.

"Second. That no person be permitted to solicit a voter for his or her signature to a petition within the offices of county clerks or registrars or adjacent corridors or on the premises, but county clerks shall cause notices to be posted within their offices calling attention to the proposed initiative petitions, thereby affording all registered voters the opportunity of signing the petitions if they desire.

"Third. A reasonable increase in the percentage required to initiate a law.

"The proposed amendment would accomplish these results: First—Prevent the presentation of fraudulent petitions containing forged signatures. Second—Stop soliciting of signatures by individuals whose sole interest in any proposed measure is the money paid them for their services. Third—Place the responsibility for the initiation of laws upon a larger and more representative number of electors.

"Farmers of California insist upon amendments to the initiative law. Their purpose is not to prevent direct legislation but rather to stop the misuse of a potent power for good. In its present form the initiative law is an evil weapon. Unless some check is placed upon it, agriculturists soon will discover that they will suffer irreparable injury through ill advised laws. Granted that they can, by Herculean efforts and close organization, defeat radical legislation—as they did defeat the eight-hour law—the fact remains that business will be kept in such a turmoil that no person will risk his money in any kind of investment, and especially in farm investments."

We do not agree with the recommendations of the league. There is need for a change and the eight per cent of the votes cast at the last election for governor of the state is perhaps too small, but all who are complaining because of the flood of initiatives with which voters were deluged must bear in mind that they were secured on petitions which required only eight per cent of the votes cast at the last election for governor. At that time the women of California were not voting, but under the law the names of women who were enfranchised at that general election were permitted on all petitions. Consequently eight per cent of the vote at this last election means more than double the names necessary to secure a petition formerly. To secure that enormous number of names by people going to the county clerk's office would simply stall the entire matter because it is probable the clerks could not secure sufficient deputies to accommodate the people who wish to sign. Therefore, the enactment recommended by the league would practically abrogate the initiative privilege. It is well that the league is taking the field to secure more reasonable use of the initiative, but we believe the voters of the state will guard jealously the integrity of this right of the people. That the voters my be better informed as to what the present law is we have asked Attorney L. B. Stanton to give us the requirements of the present initiative law.

Attorney L. B. Stanton

Initiative: Upon presentation to the secretary of state of a petition certified to have been signed by qualified electors equal in number to eight per cent of all votes cast for all candidates for governor at last preceding election, proposing a law or amendment to said constitution set forth in full in said petition, the secretary of state shall submit said law or amendment to the electors at the next succeeding general election occurring subsequent to 90 days after the presentation of said petition or any special election called by the governor at his discretion prior thereto.

Upon presentation to the secretary of state at any time not less than ten days before the commencement of any regular session of the legislature of the petition, certified to have been signed by qualified electors of the state equal in number to five per cent of all votes cast for candidates for governor at the last preceding election, proposing a law set forth in full in said petition, secretary of state will transmit the same to said legislature as soon as it convenes and organizes; the law so proposed shall be either enacted or rejected without change within 40 days from the time it was received by the legislature. If the law be enacted it should be subject to referendum. If the law be rejected or no action taken the secretary of state shall submit it to the people at the next ensuing election. The legislature may reject any measure so proposed and propose a different one, in which event both measures should be submitted to secretary of state at the next general election.

Referendum: Upon presentation of

Wilson's Quality Trees

Are in heavy demand this season. The selection of buds from established bearing orchards, careful selection of seed, causing healthy, vigorous growth—THE REASON. The following letter is one out of many thousands we have received in the past:

Grass Valley, Calif., Dec. 7th, 1914.
Fresno Nursery Co., Inc., Fresno, Calif.
Dear Sirs: In January, 1912, I received from your nursery 210 walnut trees of three varieties, which I am pleased to say have yielded since the first year of planting, each variety bearing a few nuts of excellent quality and TRUE-TO-NAME. I never lost one single tree of your shipment. The 600 pear trees received at the same time as the walnuts are also very satisfactory. My trees have done so well that the local paper has given considerable space about the vigorous growth of my orchard.
Very truly, (Signed) GORDON S. MORGAN.

That tells the story.—Prospective Planters, give us an opportunity of starting you right by supplying strictly first class nursery stock. Send us a list of your requirements for quotations. Our large 52 Page Book describes all varieties of Fruit Trees, Grape Vines, Ornamental Trees and Shrubs, Palms, Roses, etc. We send this book free upon request. Remember we specialize on DECIDUOUS FRUIT TREES, CITRUS TREES, OLIVE TREES, FIG TREES, GRAPE VINES, and Hardy Ornamentals. Write us if you want the best that money will buy. Address

THE FRESNO NURSERY CO., Inc. 300-340 Cherry Ave., Fresno, Cal.

The Only Scientifically Constructed Surface IRRIGATION PIPE
Is The "AMERICAN"
LOCK SEAMS WITHOUT RIVETS. NO ROUND SEAMS TO LEAK

Will outlast any other pipe made—easily handled—best for irrigating alfalfa. (We make and recommend Riveted Pipe for underground use only.) Write for Illustrated Catalogue, Irrigation Folder, and ask us "How to Test Pipe."

American Steel Pipe & Tank Company
354-55-56 PACIFIC ELECTRIC BLDG., LOS ANGELES, CAL.
Branch: 1228 H St., Fresno.
3

secretary of state within 90 days after final adjournment of the legislature of the petition certified to have been signed by electors equal in number to five per cent of all votes cast for all candidates for governor at the last preceding election, asking that any act or section or part of any act of the legislature be submitted to the electors, the secretary of state shall submit to the electors such act, section or part of such act at the next succeeding general eletion, occurring subsequent to 30 days after filing said petition or any special election called by the gevernor prior to such regular election, and no such act, section or part of such act shall go into effect until and unless approved by a majority of qualified electors voting thereon.

Any act, law or amendment submitted to the people by initiative or referendum and approved by the majority of the votes cast should take effect five days after the date of the official declaration of the vote of the secretary of state. No such act, law or amendment shall be subject to veto of the governor, or be amended or appealed, except by vote of the electors, but acts and laws adopted under the referendum may be amended by the legislature at any subsequent session.

Each signer shall add to signature street number, address and place of residence and election precinct. Petition may be presented in sections and each section be filed wtih the county clerk of the county in which it was circulated within 20 days after filing said petition, the clerk shall determine the number of electors to sign same or transmit to the secretary of state within 40 days after the transmission of said petition by the clerk, a petition containing supplemental names may be filed, which shall be examined by the clerk within ten days and sent to the secretary of state. When the secretary of state has received a petition of one or more county clerks he shall forthwith transmit to the county clerk of every county in the state his certificate showing such vote, which shall be filed for record by such county clerk in his office.

An initiative or referendum in county ordinances may be submitted and a petition filed with the county clerk signed by 20 per cent of the entire vote cast within the county for all candidates for the United States house of representatives at the next preceding general election, in which case the board of supervisors shall either pass the ordinance without alterations within ten days after it is presented or proceed to call a special election in which the ordinance shall be submitted to the vote of the people; or if the petition is signed by electors equal to ten per cent and less than 20 per cent of the vote cast, the ordinance shall be submitted to vote of the people at the next general election in which candidates for congress will be voted for. The remaining provisions are very similar to that of the constitution.

INSURANCE BY MAIL

It is astonishing how mail order business has developed during the past few years. It has been opposed most vigorously by local merchants, but still it has grown, and the only reason for its growth that we can see is that there has been a special demand for it. Much of the mail order business has been developed in the country, and it flourishes there.

We learn that there is an insurance company which seeks to secure its insurance policies by mail instead of by personal solicitation. Whether or not it can succeed only time will tell, but before it has had a chance to try it out fully, a law has been proposed in congress which is aimed at this business and which proposes to prevent this business. The house bill reads in part as follows:

"No company, corporation, association, partnership or organization, nor any officer, agent or representative thereof, or other person, shall use or be permitted to use the mails, or the mail service, or any branch thereof, for the purpose of procuring or effecting a policy of insurance upon persons or property situated in any state or territory of the United States, or for the purpose of collecting the premium on any such policy of insurance, when or where, by the laws of the said state or territory in which the said persons or property are situated, such company, corporation, association, partnership or organization is prohibited from transacting an insurance business in such state or territory."

Such legislation is not designed to protect the people from fraud, for such protection could be secured through a fraud order. If the company is a bad one, it can be reached and punished under existing laws. If it is a good company—reliable and honest,—is not the business it seeks to do just as legitimate as any other conducted through the mails? If not, why discriminate between insurance and dry goods and groceries?

The point of the matter is that such a mail order concern pays no fees in individual states. Neither does the Chicago mail order house with no branch houses. While fees to states may be lost, will not this system of securing insurance lower the cost of insurance to the people of the states? It might cut out needless expense and make possible a lower rate of insurance.

The home insurance company has many advantages over its mail order rival, just as the home merchant has over the mail order competitor. The home companies and the companies operated by local officers should need no such law to hold their own. If they do need it, then it would seem that the principle under which they conduct their business is not economical to the people who pay for insurance. —Washington Farmer.

Time was when history was written by simply rewriting what some one else had recorded. Very few writers of history took the trouble to make original research, so long as some other author had seemed to cover the events in the period under consideration. Now, on the contrary, the history of a century ago is written out of old newspapers and, strange as it may seem, the advertisements reflect the manners and customs and methods of thought more than does the matter which is recorded in the news columns. And there is a very sound reason for this. It is still the custom for advertisers to give expression to every new idea in the advertising space of the papers. One hundred years hence one who would know about the class of farm machinery in use during the year 1914 or 1915 would have to consult the advertising columns of the farm papers of this date; as we have said many times before, our advertisements make most excellent reading and we commend them without hesitation to our subscribers.

"If I were younger and wanted to exploit a great thing I would develop the J. H. HALE peach in California and make a specialty of it by name as a canned fruit of quality and there would be millions in it, rightly handled."

J. H. Hale

J. H. HALE — The Coming Peach for California Canning

Large Size — Round Shape — Rich, Yellow Flesh — Holds Shape and Doesn't "Rag Out"

To growers who realize that the largest profits lie in the highest quality fruit, the J. H. Hale offers a golden opportunity. It is a peach exceptional in size, and this means a peach that can be most economically handled both by the picker and the canner. It cans without stringiness, doesn't "rag out" and gives a clear, brilliant syrup. Its firm, solid flesh holds shape in the can. The color is a deep golden yellow, most attractive to the eye and the flavor is unsurpassed. Mr. Hale's nation-wide reputation gives you an added advantage. Think what a peach canned under his label means.

Superb Keeper and Shipper

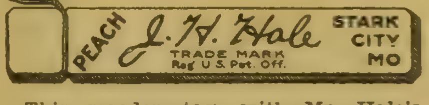
Besides offering unusual features as a canning and drying peach, the J. H. HALE stands shipping and handling better than any known peach. Firm, solid flesh of cling, yet perfect freestone. Heavy, dense, meaty, yet without coarseness or stringiness. Luscious flavor. Colors up a week to 10 days before fully ripe, permitting extra early picking. Ripens about 5 days ahead of Elberta. The one peach for export shipment. Has paid Mr. Hale 33% more than finest Elbertas grown in same orchard.

14,000 Trees Ordered By One Planter

"The Redland Heights Ranch Co., with 1000 acres at Mentone, Cal., just above Redlands, are starting their initial peach planting with 14,000 J. H. HALE trees. They will skim the cream of the markets for years to come with this famous peach. Reserve your trees NOW. Our supply for this season's planting is limited. We furnish you trees budded direct from Mr. Hale's bearing orchards—the same which paid Mr. Hale $1420 per acre.

Refuse Fraudulent Trees!

The wonderful success of the J. H. Hale has brought a host of imitators. An obsolete variety, of no commercial value, known as "Hale's Early" is being substituted for the genuine J. H. Hale. Be on your guard. You can get **genuine** J. H. Hale peach trees, budded from Mr. Hale's own orchards, **only** from Wm. P. Stark Nurseries, Stark City, Mo.



This wooden tag, with Mr. Hale's personal signature attached to all genuine J. H. Hale trees, for your protection.

Genuine Delicious Apple

Most profitable apple you can grow. Brings $1 to $2 per box more than other varieties in all markets, regardless of prevailing apple prices for the season. A renowned success on the Pacific Coast. We furnish special 4 to 6 ft. one year trees direct from our nursery and at grower's prices.

132 Page Book FREE

Full of interesting facts, gives complete description of tree and fruit, most dependable, profitable varieties. Fully illustrated. No agents or solicitors. Our catalogue is our only representative. Buy direct and save 1-3 to 1-2. Book mailed free by return mail if you write today.

William P. Stark Nurseries

Box 323 Stark City, Missouri

WILLIAM P. STARK NURSERIES, Box 323 Stark City, Missouri

Please mail me your 120 page catalog. I am interested in

☐ J. H. Hale Peach ☐ Delicious Apple ☐ Strawberries
☐ Apples ☐ Pears ☐ Cherries ——Number Strawberry Plants Desired
☐ Peaches ☐ Plums ☐ Bush Fruits ☐ Roses

______Approximate Number of trees desired.

Name ______

Address ______

The Lawn and Flower Garden

ROSES FROM CUTTINGS

Written for the California Cultivator
By Ernest Braunton

THOSE who yet have dormant wood on roses will find the present a good time to propagate strong-growing kinds from cuttings. Canes about the size of a lead pencil and a little larger are the sort to choose. These should have dormant buds on the wood and the latter cut so that three or more buds are on each cutting or about six inches long. Cut with a very sharp knife just below and just above a bud, about a quarter to a half inch. It is good practice to cut the top end blunt wedge-shape, so that the upper end may easily be distinguished from the one to be placed in the soil.

Hardwood cuttings of roses will sometimes grow under a great variety of treatment and exposure, but it is better to put them in sand or light soil, in the shade, and protected from wind. A surrounding protection of burlap or cheese-cloth on both sides and top to keep away wind and partially darken will be found to contribute to success. The soil should be dug up deeply to allow perfect drainage for the bed should never stagnate with water though it must not be allowed to dry out once. Holes for each cutting should be made with a stick larger than cutting so the latter may be shoved way down in soil without danger of bruising the cut end.

The subsequent care necessary is but a continuation of that heretofore outlined; equable condition, moisture supply, etc. No neglect or exposure should be allowed throughout the summer, nor should cuttings be planted so thickly that good tops cannot grow where they are first planted. About October, if good, healthful vigorous growth has been made, the water supply may be lessened or cut off entirely in order to render the plants dormant or at least partially so by the time the rainy season is upon us. When dormant dig up carefully, without soil, but with all the roots. Keep the latter from becoming dry by protecting from exposure to the air by covering with damp sacks, sand, or soil. Cut back top as individual needs dictate, to one to five stubby stems, and plant in permanent position. Weakly sorts should be budded on suitable stock.

Lime and Explore

Still we should lime, and lime again. Seldom do we use enough lime in the soil, either in garden or orchard, or in any kind of soil. There is hardly a crop that grows that is not benefited by lime and few indeed receive enough. As an aid to nitrification of the organic contents of the soil it is the most powerful agency known.

Again, explore. Delve into the soil as deeply as you can economically, and in stirring deeply to find out how far you may with profit go, you may get a very agreeable surprise. We are doing too much of merely tickling the surface to get the best results in either garden or orchard. Our citrus growers will some day change present practice to the point of seeing how deeply they may with profit stir the soil. It is folly to confine soil feeding and manipulation to tickling the surface when the real functional activities are, or should be, several feet below. So whatever you do with your orchard, stir the garden as deeply as ever you can. Citrus growers will tell you deep plowing and subsoiling will destroy tree roots. If so, the roots are not down where they should be, and this indicates insufficient preparation before planting. In the garden, where crops are constantly changing or we may toy with the individual tree or shrub, we may still get soil one or two feet below the surface that will bear some sort of favorable comparison with that of the top few inches. In all soil operations keep in view the fact that physical condition is of more importance than the supply of artificial plant food. For unless the soil is receptive the food cannot be used to advantage nor the user get his money back on purchases of fertilizer.

TYPICAL YOLO COUNTY RANCH HOME.

The One Best Rose

What rose is best of the many sorts we grow in Southern California? Of course it is impossible for all to agree, or there would now be no war in Europe. What is best in roses depends upon too many factors for one to say with certainty: "This is the

MORSE'S Bulbs

Among the First Flowers to Bloom in the Spring—

DAFFODILS — NARCISSUS

Always beautiful—easily grown and inexpensive — plant some in your garden now.

Our New 1914 Bulb Catalog Shows All the New Varieties and Latest Importations

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a bed of glory. A package of Morse's Pansy Seeds will work a transformation in your garden

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Lovers of Sweet Peas will find in our new illustrated 1915 catalog many helpful hints for growing and interesting descriptions of the latest novelties.

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The Largest Seed House on the Pacific Coast

Planet Jr

You need these guaranteed farm and garden implements to save time, lighten labor, and increase your yield. Backed by over 40 years' experience.

FREE Our new 72-page illustrated catalogue of 60 implements. Write for it today.

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We carry stock in San Francisco and Los Angeles. Agencies in leading Pacific Coast cities.

Planet Jr 12-tooth Harrow, Cultivator and Pulverizer

An invaluable tool in truck and strawberry patches and the market-garden. Leaves ground in finest condition without throwing dirt on plants. Has new steel wheel.

No. 25 Planet Jr Combined Hill and Drill Seeder, Double Wheel Hoe, Cultivator and Plow

Great for large-scale gardening. Steel frame. Thoroughly substantial and accurate. Enables you to work 2 acres a day.

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trees have
my orchard.

Light enough for a woman to use, but strong, handy, and adapted to all kinds of garden cultivation. Has steel frame.

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proved by actual experience, are produced by NITRATE OF SODA; because Nitrate is always needed in our soils.

Send five cents for postage on free books, and state what crops you are growing.

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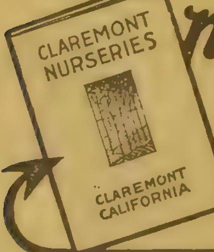

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IF YOU ANTICIPATE PURCHASING ANY KIND OF NURSERY STOCK by all means write for our Beautiful Free Catalog. Contains many helpful suggestions. We carry full lines of very best Planting Trees, Plants, Shrubs, Roses and other first-class stock. Unsurpassed packing and shipping facilities.

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TREES TRUE TO NAME
The SILVA-BERGTHOLDT CO. NEWCASTLE CALIF.
PLACER NURSERIES

Clingstone Peach Trees

TUSCAN! Ours are the improved Round Tuscans—firmer, more symmetrical and uniform, Finer Grained, less subject to Wind-Fall and Split-pit, and preferred (to the extent of $2 to $5 more a ton) by canners to the oblong Tuscans commonly propagated.

PHILLIPS! We cut our buds from a block of trees that have proven an exceptionally good strain of this variety. Peach trees are always a safe investment—the demand is large, the price firm, and the profit good. What more can you ask?

THE SILVA-BERGTHOLDT CO., "Fruit Tree Specialists," P. O. Box A Newcastle, Cal.

TREES TRUE TO NAME
The SILVA-BERGTHOLDT CO. NEWCASTLE CALIF.
PLACER NURSERIES

best.” Aside from soil, climate, treatment, and own-root or budded stock there comes in the never-ending consideration of individualism. In the writer's garden grow a half-dozen Maman Cochet, and no two are alike as to size and vigor of bush, and while the range in quality of blossom is not so marked, it is present.

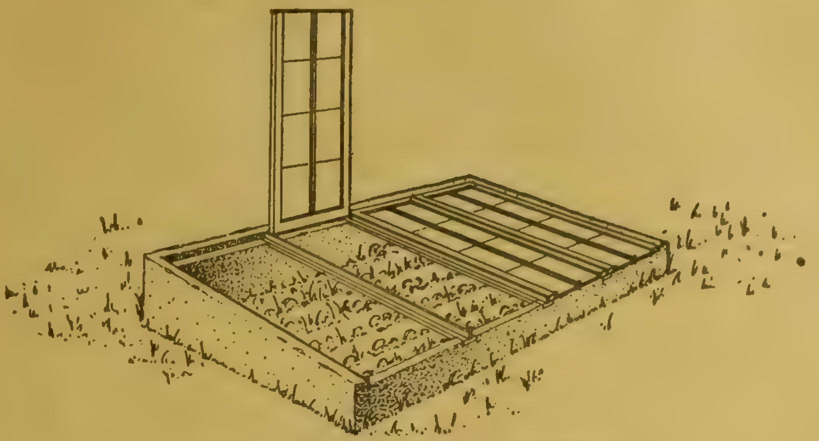
So is it with other sorts. Therefore what shall we say? The best crop of flowers known to the writer for a period of several years was from a Kaiserin Augusta Victoria but in his own collection of more than 100 plants the Madame Abel Chatenay has, throughout ten years and at all seasons, most pleased the mistress of the home, and of course “we” agree. At times several other sorts excel, but the two named have stood the test of years most satisfactorily. The largest and most beautiful closed buds at present, and at all times, are on Betty. The finest bud the writer ever saw, half-open, was a Lady Battersea. The only really white roses of good quality are Frau Karl Drusckhi. In baby roses nothing approaches the bush Cecile Brunner and its fragrance is pronounced and delightful. While considering the odor the yellow Franz Deegan stands high.

Belgian Bays

News comes direct from Belgium that the occupation of the country by invading forces has interfered with the bay tree industry to a serious extent. One grower states that through lack of other shelter as many as 60 German soldiers have slept in one of his greenhouses. While the lives of humans are fairly safe the lives of bay trees are slowly fading, and if the war long continues there will not remain enough laurel to crown the brows of the conquering commanders, no matter which side wins.

A Fine Dwarf Evergreen

Some time ago a well-posted local plantsman was asked what one shrub of low growth he considered superior to all others in the market, and he named Abelia grandiflora. This is by no means an uncommon shrub for it was being sold in local marts a quarter of a century ago, but it is one that has held the popular esteem continuously. It grows about three feet high, has small shiny evergreen foliage of a pleasing green, bears heavy crops of small but showy white bell-shaped flowers and seems to hold its health and vigor in almost any soil and under widely varying conditions.



COLD FRAME GROOVED FOR SASH.

A Rare Acacia

Though Acacia podalyraefolia has been for some years in the local market it has not been widely disseminated. Of all the species so far grown in California it is the most beautiful, either in or out of flower. Many are hardier, more robust, and grow faster, and for these reasons it has not grown in popular favor as fast as its beauty of foliage and flower would lead one to expect.

Small Fruits Vegetables

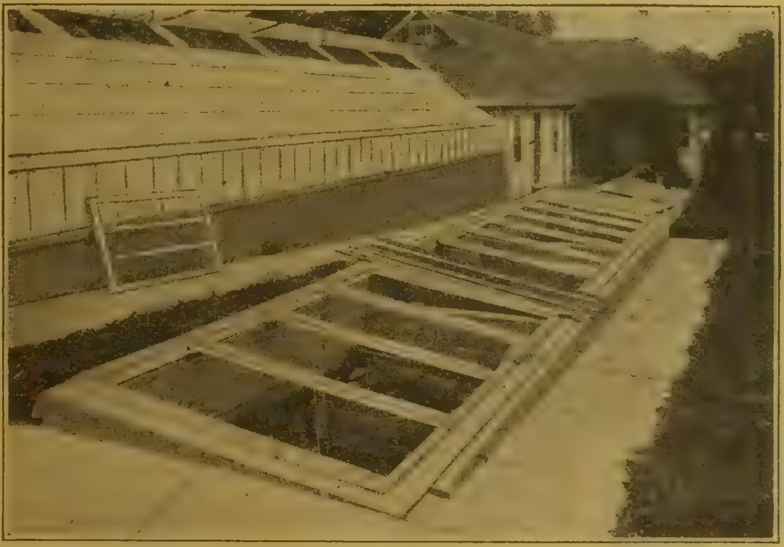
CONCRETE HOT-BEDS AND COLD-FRAMES

Means for Growing Winter Vegetables and Early Spring Plants

There is nothing which pleases the appetite so much as delicacies out of season. As for vegetables, such delicacies are not costly luxuries and are within the means of anyone who will take the time to build and run a hot-bed or cold-frame. Moreover, by this means, one can depend on having good hardy plants for spring planting in the garden.

Proper Time to Build Hot-Bed

September and October are the months to prepare the hot-bed. To avoid annual repairs and to secure the best results build it of concrete. Locate the bed on the sunny, wind-protected side of a building. A four-sash bed is usually large enough except for commercial purposes. A standard hot-bed sash is three feet by six feet. Lay out the bed six feet eight inches wide by 12 feet ten inches long. The concrete walls are six inches thick. Dig the foundation trenches two feet six inches deep within the lines given above. Make forms of one-inch lumber to carry the south (front) wall six inches and the north (back) wall 14 inches above ground. Forms are not required below ground level. The tops of the end walls slope to the others. Before filling the forms with concrete, test the dimensions of the bed by means of the sash. See that the sash lap the forms two inches on all sides.



WELL-LOCATED CONCRETE HOTBED

Mixing and Placing the Concrete

Mix the concrete mushy wet in the proportion of one bag of Portland cement of two and one-half cubic feet of sand to five cubic feet of crushed rock, or one bag of cement to five cubic feet of bank-run gravel. Fill the forms without stopping for anything. Tie the walls together at the corners by laying in them old iron rods bent to right angles. While placing the concrete set one-half inch bolts about two feet apart to hold the wooden top-framing of the bed to the concrete; or make grooves in the top of the concrete for countersinking the sash to the level of the walls with an allowance of one-quarter inch for clearance. This can be done by temporarily imbedding in the concrete wooden strips of the necessary dimensions. During this operation, by means of blocks nailed to the strips, make provision for the center-bars described below. Remove the strips as soon as the concrete stiffens. Take down the forms after five days. The extra two and five-eighths inches in length of the bed is allowance for three center-bars between the sash. These sash-supports are of dressed one-inch stuff, shaped like a capital “T” turned upside down. The length of the stem of the “T” is equal to the thickness of the sash and the top is three inches wide. Sufficient materials for the concrete will be supplied by 14 bags of Portland cement, one and one-fourth cubic yards of sand and two and one-half cubic yards of crushed rock; or 14 bags of cement and two and one-half yards of pit gravel at a cost of $10.00.

Preparation and Care of the Hot-Bed

If the bed is to be used as a cold-frame, it is finished when covered with glass. For a hot-bed, dig out the dirt to the depth of two feet, tramp in 18 inches of fresh horse manure well mixed with leaves or bedding and cover it with four to eight inches of rich soil. Bank the excavated earth around the outside of the bed. Put the sash in place, hang a thermometer on the inside and allow the bed to heat up. After a couple of days, when the temperature has dropped to

(Continued on page 639)

PLANT APRICOTS

Consider these facts—
Market—The entire world.
Demand—Steadily Increasing.
Supply—Grown commercially only in California.
Profit—From $175 to $300 an acre.

Weigh the evidence, and your own good judgment will tell you to plant

SILVA-BERGTHOLDT'S
Foot-Hill Grown
Apricot Trees

Prized for their thrift, hardiness, good root systems and freedom from disease.

Though we have an extra fine block of Blenheims, Royal, Newcastle Early, Moorpark, Routier's Peach, and Tilton on Apricot, Peach and Myrobolan Root, a shortage of good stock is expected this year, so order now and get choice trees.

WRITE US FIRST

The Silva-Bergtholdt Co.
P. O. Box A Newcastle, Cal.

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For Water, Oil, Wine, Mining and Cyanide.

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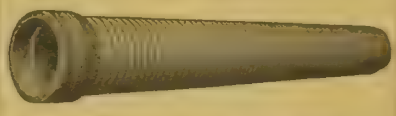

Wood Pipe for Irrigation, City Systems, Mining Power Plants

Send for copy Mining Catalog No. 7, Tank Booklet, or Pipe Booklet.

All full of valuable information.

PLANT BERRIES

Alfred Mitting has had 47 years experience with berries from all over the world. His new berry, Macatawa, is the wonder, to all that see it in fruit. It is 3½ inches one way by 3¾ inches the other way. Send a postal card today for his 1915 catalogue with 1 colored plate, including the cream of all berries from a commercial standpoint or for home requirements.

ALFRED MITTING
8 New Street, SANTA CRUZ, CALIFORNIA

Bulbs

For fall and winter planting; also Flower Seeds for fall sowing. New Catalogue now ready, mailed free upon application.

NOW IS THE TIME TO SOW

Payne's Royal Exhibition Pansy Seed, the best strain on the Pacific Coast, Giant Perfection Stocks and Payne's Christmas Flowering Sweet Peas, all described in the above mentioned Catalogue.

THEODORE PAYNE
245 S. Main St. Los Angeles, Cal.

This year's Hawaiian sugar crop, the largest ever harvested, will be approximately 625,000 short tons

Established 1888. Twenty-fifth Year.

The California Cultivator

Rural California combined with the California Cultivator

A Journal of Horticulture and Agriculture

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THE CULTIVATOR PUBLISHING CO., Inc.
115 and 117 N. Broadway,
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OUR ADVERTISERS RELIABLE

We guarantee our subscribers against loss through dishonesty of any advertiser in the Cultivator. We do not attempt, however, to adjust trifling differences between subscribers and honest, responsible advertisers, nor will we pay the debts of honest bankrupts. Notice of complaint must be sent us within 30 days from date of the transaction, and the subscriber must have mentioned the Cultivator when writing the advertiser.

MERRY CHRISTMAS

The Cultivator has the heartiest wish for a Merry Christmas season for everyone of its readers, and it will be indeed if the true Christmas spirit inspires us all to make it a happy season for others. Pass on the word of good cheer—better, the cheery good deed.

WRITE A LETTER

Did you write that letter of invitation on December 15, which was last Tuesday? If not, make a Christmas letter of it and make the invitation so warm that all the world will come to California sometime during 1915. It will be a great year for the state; more, it will be a great year for everybody who comes here.

SEND PHOTOS

We are expecting a fine collection of photos to choose the New Year's prize from. For this prize competition we will want the photos of rural scenes to be in this office by the last day of 1914. Send in the photos of the humans, of the livestock, of the orchards or of any rural California scenes.

FROST WARNINGS

The weather for the past week has been sufficiently cold so that many citrus orchardists have closely watched their thermometers and the air currents. The Los Angeles office of the United States weather bureau has been giving most excellent service which is fully appreciated by the citrus growers.

When frost is expected such warnings are incorporated in the regular issue of the daily weather forecast card and the weather map. These publications are mailed at 9:30 a.m., daily, except Sundays and holidays. Warnings are also sent by long-distance telephone; this is an emergency measure and is employed by this office only on Sundays and holidays, and at night when the evening telegraphic weather conditions show a change from the regular morning forecast as printed on the card and map. Evening telephone warnings are filed with the long distance chief operators of both telephone companies not earlier than 6:30 p. m., and generally before 7:30 p.m.

FILE THE CULTIVATORS

The worth of the Cultivator is being shown by the requests which come almost constantly for back numbers to complete files where some particular article has been lost. The semiannual index makes the paper of particular value to every farmer in California and their filing once they are received and read will preserve in most convenient form a fund of information for reference which can be secured in no other way. All the larger libraries of California are preserving the bound volumes of this paper. Just at present we have requests for a copy of the issue of January 12, 1911. Any subscriber who has this particular copy and does not care to keep it to make his own file complete will confer a favor which we will be glad to return if he will mail copy of above date. For the first copy received at this office a three months' extension of subscription will be given.

REPORT OF SECRETARY

The report of the secretary of agriculture for 1914 is now being mailed from Washington. "Evidence abounds that more attention and more intelligent thinking are being directed today to the study of the fundamental problems in agriculture and in rural life than ever before. The last two years have been fruitful of significant state and federal legislative and administrative measures designed to foster agriculture, to improve the distribution of agricultural products, and to better rural life. The people of the nation, urban and rural alike, are keenly interested in efforts to increase the supply of the necessaries of life and recognize the supreme importance not only of making agriculture efficient and profitable, but also of making rural life comfortable, healthful, pleasurable, and attractive. Agriculture has made marked progress in a number of directions, but as an industry it has not kept pace with the other activities of the country."

Among the figures which are more or less interesting we note that the total production of the dairy industry of the country amounted to something over $600,000,000. The production of orchard fruits exceeds 216,000,000 bushels of the value of $140,000,000. If this last figure is correct the citrus fruit growers of California produce from one-fourth to one-fifth of the fruit wealth produced by the orchards of the nation. Of vegetables the nation produces $400,000,000, of hay in excess of $800,000,000. Poultry products are over half a billion, or about half as valuable as those of the cotton field. Last year's wheat crop was the greatest produced in history of the country, approximately 892,000,000 bushels. In cattle, sheep and hogs there has been a decline. The last year's production of cattle approximated about 10,000,000 head, that is, there was a reduction from 50,000,000 head to 41,000,000. There was about the same loss in sheep, while in hogs the former year's total of 63,000,000 was reduced to 58,000,000. Since 1909 the tendency has been downward, and yet since 1899 the population has increased over 20,000,000. In discussing the cause of the decline in cattle the reduction of the great ranges and the fact that there is more intensive farming along some other lines are referred to, but no reference is made to the fact that livestock producers have not had just treatment at the hands of the great packing trusts. However, there is a suggestion that cooperative slaughtering of livestock may lead to the farmer securing more satisfactory returns.

Attention is called in the report to the fact that the standard of production for each person engaged in agriculture in this country is far greater than that of the European farmer, but the production per acre is much smaller. The secretary estimates that the American farmer is from two to six times as efficient as most of his competitors. This is due to extensive farming rather than to the intensive farming usually followed in other countries. The secretary appeals for more diversification, and in making his point refers to the fact that Texas annually imports from other states more than $50,000,000 worth of wheat, corn and oats; Georgia more than $24,000,000; South Carolina more than $20,000,000. Other southern states are given as examples. Along the same line he refers to the fact that the average Iowa farm has six milch cows while the average in Alabama is less than two and in South Carolina, one. While the average Iowa farm has 35 cows the average in North Carolina and Alabama and some other southern states has only four to five. While Iowa has 108 head of poultry on its average farm most of the southern states have from 17 to 20 and in addition it is stated that the average farm home in Georgia has from its own poultry less than two eggs per week, less than two-thirds ounces butter and less than two-thirds pint of milk per day.

After a great array of such figures the secretary adds: "Too exclusive devotion to a single crop anywhere is unwise for normal times and spells disaster in times of disturbance. It is bound to produce just such a catastrophe as has befallen the south in the present emergency. It prevents the full utilization of land and labor, fails to fill the gaps in the work schedules, and furnishes no reserve."

As to animal diseases and their control—bovine tuberculosis is increasing. Of the 57,000,000 animals inspected during the year 533,000 were affected. From hog cholera there was a loss of 6,000,000 valued at over $60,000,000. The Texas fever cattle tick caused a loss of $40,000,000, though some estimates give as high as $100,000,000 as the total loss. As to the foot and mouth disease (the present attack being the sixth which has visited the country), two of the former outbreaks were traced to the introduction of vaccine virus, while the cause of the present outbreak is not yet known, the most plausible suggestion as to its origin is that it was introduced by importation of an article used in tanning.

Marketing and the business side of farming are treated at length. "One of the greatest weaknesses of American agriculture at the present time arises from lack of knowledge of the facts of distribution and business organization, of capital and of resident leadership." Of cooperative marketing organizations there are now amongst strawberry growers 900; peach growers 1800, tomato growers 600, cabbage growers 1700, onion growers 1500, etc. Rural credits, good roads, dealing in cotton futures, and many other matters of vital interest to farmers are discussed. Of course the department hopes to be of vastly greater service to the farmer, and the report gives evidence that much consideration has been given to his problems.

Agricultural Notes

Virginia apples are reported as being well received in Liverpool markets.

The town forest of Baden-Baden, Germany, yields an annual profit of $5.25 per acre, or a total net profit of nearly $67,500.

Forty million tons of potatoes, it is stated, are consumed annually in Germany. Not all of this, of course, is eaten, much of it is used in the manufacture of starch, alcohol, etc.

Quarantines against foot and mouth disease have been relaxed but little. In some states, including New Hampshire, new quarantines have been ordered because of the discovery of the disease in new places. The state of Delaware has issued a quarantine order against the bringing of dogs into the state, in baggage cars or by express.

The Osceola County Fruit and Truck Growers' Association has adopted an official stamp and every package shipped from this county will be marked with it. The design is a circle with the name Osceola Fruit and Truck Growers' Association set around the circle. The name of the place from which the shipment is made will be placed in the center.

It is stated that the Russian ministry of ways and communications is sending to the front a "bath train" of over 20 cars, providing 2,000 baths daily. There is a tank car in case water is unobtainable at any stopping place. Soldiers can be given clean underclothes from the stores carried. There is also a car for drying and disinfecting outer garments and a restaurant car.

The novel plan of increasing imports of American cottonseed oil into northern Africa by introducing modern oil pressing machinery and encouraging the natives to produce better grades of olives has been proposed in a publication just issued by the bureau of foreign and domestic commerce. The idea is that the natives will sell the high-grade olive abroad at excellent prices and then import cheaper oils for their own use.

The fruit growers of the Grand Traverse section of western Michigan are forming a cooperative association for the marketing of their orchard products. The quantity of fruit being harvested each year makes it necessary to secure new markets and to give more careful attention to the distribution. Shares of stock in the association are now being sold and it is hoped that before the spring work begins in the orchards the organization will be sufficiently completed so that the 1915 fruits will be marketed in such a way that each grower will not be the competitor of his neighbors.

Agricultural News Notes of the Pacific Coast

Northern California

Mendocino County papers are a unit in "We want a farm adviser."

War demand for onions has given a material boost to prices in all sections.

The Placer County farm bureau is now working hard to secure a farm adviser.

Humboldt County has the largest dairy association of any county in the state.

A Nevada County potato grower has produced three tons of fine spuds from a quarter of an acre.

Live stock men of Eldorado County are appealing to forest supervisors to keep scrub sires off forest ranges.

A San Francisco capitalist is planning for the making of a 1,000-acre orchard near Pleasant Grove, Sacramento County.

The Fairoaks section of Sacramento County has shipped eight and one-half cars of oranges this season, mostly to New Zealand.

Thirteen Northern California Counties have an acreage of bearing olives which they claim is nearly 49 per cent of that of the entire state.

The Sebastopol Apple Growers' Union reports the sale during the past season of 110,432 boxes of apples. More than half of these were Gravensteins.

A strawberry grower at Placerville, Eldorado County, claims he has produced berries which are equal to those of Atlantic Coast points in excellence of condition.

A 500-bale bunch of Yolo County hops was sold last week for seven and one-fourth cents. At about the same time Sonoma, Mendocino County, farmers secured nine and one-eighth cents.

Farmers over the Sacramento Valley are discussing advantages and disadvantages of the proposed new law which will place all state boards of agriculture and horticulture under one executive head.

For the women of California the Woman's Board of the Panama-Pacific International Exposition has undertaken to furnish rooms and act as hostesses in the California host building during the exposition.

The Humboldt County Dairymen's Association, in regular monthly session, opened bids for spring planting. The matter of conributing to the dairy exhibit at the Panama-Pacific was taken under advisement by a committee.

The county superintendent of schools of Santa Clara County has made the suggestion that pupils interested in agriculture take up a course in milk testing, and has offered a milk tester for the use of any school making application for it.

Fruit growers of Eldorado County organized the Standardized Fruit Alliance at the board of trade rooms at Placerville recently. Officers are William Veerkamp, president; John Harris, reelected secretary for his third term, and the board of directos, C. H. Wildman, U. D. Randall, Charles Schaeppi, J. W. Clark, C. E. Fogg.

Central California

Porterville has been shipping close to 50 cars of oranges daily.

It is proposed to organize a farmers' union local in Tulare.

The district east of Dinuba, Tulare County, is still picking tomatoes.

These are busy days for the milk condensary at Hughson, Stanislaus County.

Fresno is devoting $100 monthly to the maintenance of a municipal employment bureau.

State organizers of the farmers' union have been in Tulare to work for organization of a local.

One Dinuba orange grower ships his entire crop to Saskatchewan, Canada, and markets it from that point.

The state board of health has taken up the matter of green oranges, and will prevent the sale of unripe fruit.

Directors of the Turlock irrigation district have abolished the office of water superintendent for the time being.

Since July 1 more than a quarter of a million tons of California barley have been shipped to New York and to Europe.

Porterville orange packers are reported very well satisfied over prices received in eastern markets for their early fruit.

It is rumored that the vast Miller & Lux holdings on the west side of the San Joaquin Valley are to be subdivided into small holdings and sold.

A rancher near Woodlake, in Tulare County, is experimenting with the manufacture of molasses from sorghum, and the product is said to be excellent.

A dry milk factory is proposed for Crows Landing in Stanislaus County. Farmers of Oakdale, Stanislaus County, are considering growing sugar beets next season.

A mass meeting was recently held at Lindsay, Tulare County, to discuss feasibility of controlling flood waters in the mountains by throwing a dam across the Yokohl Valley.

By a recent court decision a Santa Cruz County dairyman has been upheld in his refusal to pay contract price for baled hay containing a liberal quantity of rocks, old bones and other foreign matter.

At a recent meeting of the San Jose Grange the matter of cooperation, especially on the attitude of congress regarding the Sherman anti-trust law, was discussed. At the meeting sales of prunes were reported at 5¾ cents.

Fresno fruit men are anxious to entertain, for one day at least, delegates to the Fruit Jobbers' Association of the United States and Canada, who will meet in annual convention in Los Angeles the second week in February.

The Modesto Farmers' Union has been reorganized. Newly elected officers are J. M. Bomberger, president; J. K. Carson, vice-president; J. C. Galloway, secretary; Mrs. Pauline Grimes, chaplain; C. J. Perry and A. L. Rutherford, lecturers; J. W. Webb, D. Grundy and G. H. Miller, conductors; D. M. Hackett, doorkeeper.

Southern California

Rialto shipped out her first car of navels December 5.

Ventura County is discussing the good roads campaign.

The Arlington district of Riverside County reports a total rainfall for the season of 1.77 inches.

Bee Inspector J. E. Pleasants of Orange County reports apiaries of his district in excellent condition.

An ostrich farm has been started at Calipatria. Some 600 ostriches have been brought in from Arizona.

The West India Gardens, formerly located at Altadena, will have an extensive nursery at Vista, in San Diego County.

San Bernardino's orange show will be held February 17-24. Many districts have already reserved space for exhibits.

Picking has begun in several Covina orange groves; the fruit testing sufficiently sweet to meet government requirements.

Brawley melon growers are already agitating some method of marketing that will assure them of a large proportion of profits.

Fontana, San Bernardino County, will feature a small model packing plant as its exhibit at the coming National Orange Show.

The Farmers' Club of Mound, Ventura County, at its November meeting, discussed the matter of the lima bean contest, both past and future.

The Claremont Pomological Club held a meeting December 5 at the citrus experiment station at Riverside, 175 members of the club attending.

The Ventura County Swine Breeders' Association now has a membership of 27. They recently met with the farm adviser and discussed best practices of the industry.

San Pasqual Valley, near Escondido, San Diego County, claims to put up some butter of "some quality." San Diego County people often ask for San Pasqual butter.

The yield of cotton in the Palo Verde Valley in Riverside County, this year, will break all records, many farmers reporting a bale to the acre the first clipping.

The Orange County Vegetable Growers' Association, composed of 135 members of the Villa Park district, marketed about $100,000 worth of produce the past season.

Some hundred thousand tons of beets have been worked up at the Los Alamitos factory this season. The slicing season is now over but the sugar refining will continue for some months yet.

At the recent annual meeting of the Covina Citrus Association the report showed that 626 carloads of oranges have been sent out from the packing house during the season just closed. The following officers were elected for the coming year: Anton P. Kerckhoff, president; J. R. Elliott, vice-president; George Anderson, secretary and manager; W. P. Watts, J. F. Brock, Herman T. Headley, P. H. Maurer, W. H. Overholtzer, Irwin Shupp, Jr., Grant Chapman.

The Coast

Many Northwestern apples are being shipped to England.

A hog show is being held at Pullman, Washington, this week.

Plans are being instituted to install a farm adviser at Tumwater, Washington.

Many horses of the Northwest are being purchased for shipment to Europe.

The Pacific Inernational Live Stock Exposition was held at Portland, Oregon, last week.

Farmers near Colfax, Washington, have organized a cooperative fuel and lumber company.

The O. W. R. & N. Company held a corn show at Walla Walla, Washington, November 25-28.

Reservoirs holding water for live stock have been constructed on the ranges of Yavapai County, Arizona.

Farmers of Whitman County, Washington, have shipped a car containing 623 sacks of flour to the Belgians.

Yakima hops are selling from seven to 11 cents. The crop in that section this year will aggregate about 32,000 bales.

Wool producers of Baker and Grant Counties in Oregon are urging growers to hold for at least 25 cents per pound for the next clip.

Sheep men of Navajo County, Arizona, have organized a county wool growers' association. C. Hess of Holbrook is the secretary.

Farmers of Arizona are gratified at results secured by demonstration train trips in that state. Other trips will be taken up early in January.

The Washington State Dairymens' Association convened last Wednesday morning at Chehalis, Washington. It will continue until Friday evening.

The Oregon State Hop Growers' Association, a strictly cooperative institution, is urging its members to refrain from contracting, and to that end is advancing money to the members where necessary.

The entire destruction of a herd of 101 pure-bred Holstein cattle shipped to Spokane, Washington, and found to be diseased with foot and mouth disease, has resulted in the complete eradication of the disease.

Plans for Farmers' Week and the Congress of Conferences to be held at the Oregon agricultural college at Corvallis in January, 1915, call for a remarkably attractive session. Indications are that the attendance will be large.

At a by-products convention, held at Spokane recently, 10 men from various sections of Oregon and Washington were named as a Central By-Products Board, which is to organize fruit growers of the two states in order to save wastes and check selling rivalry.

Experts of the department of agriculture state that the standard of American draft horses will not suffer because of the interruption of foreign importations, there being a sufficiently large amount of pure blood already in the country. It is thought the American draft horse will now have an opportunity to show its worth.

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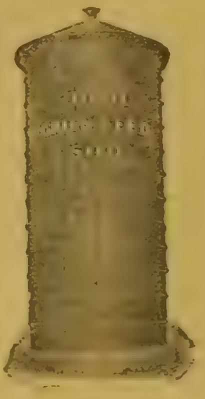

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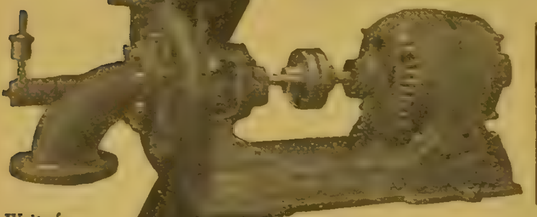

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will cost you only $50 a unit including the vacuum pump; a 3-unit outfit, $225 complete aside from power. This price is made possible by our being able to build 100 machines a day. The **Hinman** has been in daily use for over six years and today is used by many of the best known dairymen in the U. S. and Canada 15,000 **Hinman Milkers** are now earning for their owners from 50% to 150% yearly on their original investment.

A 5-unit outfit requires only 1 H. P. to operate it. The up-keep of each unit average about $1.50 per year. All parts are interchangeable and can be secured at any of our branch houses. Our service is complete. Let us mail you our free book **"Making More Money with the Hinman Milker."**

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Live Stock and Dairy

SILAGE FOR CALIFORNIA

Written for California Cultivator
By Sacramento Valley Contributor

"WHY should one put up silage in California?" asked a newcomer from the middle west who has read of the mild climate and long growing season, grass the year round and no zero weather, a story told and truthfully, too, in all of the advertising matter about our beloved and wonderful state. "Why should it not be cheaper to grow soiling crops and always have green feed to graze or cut daily and feed?" questions the man who does not want to spend any more than is necessary on buildings and equipment.

Labor is a big factor on a farm, and while the soiling proposition is a good one, a great deal of labor is required in planting, caring for and harvesting the crops that will be used for soiling. When a field of grain or hay or corn is cut and harvested and taken care of all in one job, the per acre or per ton cost can be kept down to a reasonable figure, and the same is true of planting a big field of grain or corn—but in a soiling system there is a "puttering" job of cutting, raking, hauling in, and feeding every day, and every few days a job of planting so as to have the crops come on in rotation. On many farms the labor factor would be an expensive luxury; on some others it might work out with economy. Then during the part of the year when an abundance of feed is required—the winter months—the growth of vegetation is slow as compared to the warm growing weather of summer and a large acreage in soiling crops.

On high priced irrigated land, capable of maximum crops, such things should be grown in their proper season as will make the largest amount of feed from a given area, and while soiling crops can be used to advantage a part of the time, alfalfa hay must be cut and stored and corn must be put in the silo. Advantage should be taken of every bit of feed-making energy the farm possesses.

The farm on which the silo is a necessity is of course a livestock farm, and the object of this kind of an establishment is to produce and market the largest possible amount of finished product every year.

Let us see how such a farm might be planned. Assuming a good 40-acre irrigated farm with 30 acres of it always in alfalfa, but rotated so as to give 10 acres of alfalfa sod to be plowed every few years, the 30 acres of alfalfa should, according to many calculators, keep 30 cows for a year. If the cows will do well on alfalfa alone they will do better and pay a much bigger net revenue if fed 20 pounds of corn silage a day in addition. A 100-ton silo will hold 200,000 pounds—30 cows will require 600 pounds a day at 20 pounds per head—so that this silage would, if fed that way, last 350 days, practically all of the year.

The 10 acres of alfalfa sod, well manured, should easily produce 20 tons of corn for silage per acre; it should produce double that in fact, for in Michigan over 50 tons of corn silage has been produced per acre. But at 20 tons per acre enough feed will be grown to fill two silos or one silo, and leave five acres of corn for soiling or to harvest to fatten hogs on. Then this field that raises the corn can grow a barley crop, planted in winter or spring, and cut for grain hay or harvested by hogs on the ground before the ground is irrigated again and the corn planted in June.

In this assumed case the silo makes it possible to greatly increase the production of an alfalfa fed herd or makes it possible to carry more cows or other cattle or sheep or hogs on the same farm than could possibly be the case without it. This farm properly handled as a business proposition should also buy and feed a considerable quantity of grain every year—as a most satisfactory dairy ration for the highest production should have some grain in addition to alfalfa and silage.

The principal dairy and stock feed of California, alfalfa, is sweet and rich in protein. Corn silage is sour, succulent and rich in carbohydrates. Protein is a high-process food product and because it is easy to raise we are very prodigal of it. We make it take the place of cheap carbohydrates. In the east the condition is the reverse; protein feeds are scarce; carbohydrates plenty. Beside being wasteful to burn up protein in making bodily-heat and energy when corn will do it just as well, there is too much sameness to an all-alfalfa ration. Granting that alfalfa is the best single feed we have, it must be admitted that no single feed is as valuable as a combination of feeds. The value of corn silage in various feeding tests is estimated at from $4.00 to $6.00 per ton. To feed with an abundance of alfalfa as a balancer it may be worth much more in specific instances. It should be put in the silo for less than $1.50 per ton.

Almost any crop may be put in a silo, but Indian corn is acknowledged to be the best. The stalks cut into one-half or three-fourth inch lengths with the mixture of grain and leaves and succulence packs well, ferments well and keeps well. Sorghums develop almost too much acid and the stalks of milo maize and Egyptian corn are pretty dry and woody, although all will make silage, as will first or any cutting of alfalfa full of foxtail and weeds or grain. The beards of foxtail are softened in the fermenting process so as to be made inoffensive.

We know of no better argument in favor of carboyhydrate silage than for any one interested to visit some man, and there are many of them in California, who is feeding corn silage. Experience and satisfaction on the part of the man who must make money from the use of the silo or quit using it is the most conclusive of all. One silo is generally the forerunner of two or three or a whole battery of them. And this is the answer; corn silage is a success in California.

FOOT AND MOUTH DISEASE DEMANDS RADICAL METHODS

Foot and mouth disease has made its appearance in this country for the third time in 12 years, having been introduced into New England in 1902, in the middle eastern states in 1908, and just recently in the middle western states.

The disease affects cattle principally, but all cloven-footed animals are susceptible, so that swine, sheep, and goats are sometimes stricken with the disease. Human beings sometimes contract the infection by drinking milk from infected animals or from handling animals having the disease.

Foot and mouth disease is remarkable for the swiftness with which it spreads, says H. Preston Hoskins, of Minnesota University Farm, St. Paul. The disease is spread by contact, and any object that has been contaminated with the discharges from the sick animals may convey the infection to healthy animals. The germs of the disease may be carried on the shoes or clothing, by vehicles, on the hoofs of animals, by dogs, cats or birds.

The disease is not necessarily fatal, although a small percentage of affected animals may die. One attack of the disease does not confer permanent immunity. An animal may have the disease two or three times. Affected animals usually recover without any treatment.

The most prominent symptoms are a high fever, loss of appetite, and the formation of vesicles (blisters) in the mouth, on the tongue and lips, and sometimes on the udder. Similar eruptions take place between the toes at the coronary band and cause extreme lameness. Animals with marked foot lesions often lie down and refuse to get up on account of the pain of standing. Affected animals frequently stand with the head down and with streams of saliva flowing from the corners of the mouth. Marked disturbances of the digestive organs are often observed.

The United States is the only country in the world that has demonstrated its ability absolutely to eradicate the disease, and it is to be hoped that the methods which have been successful before will speedily check the present outbreak.

In general the plan is to slaughter all infected and exposed animals, bury them in deep trenches and cover the carcasses with quick lime. Infected premises are thoroughly disinfected and quarantined. No live stock can be brought to the premises for four months. Public highways in infected territory are closed to traffic. Persons are not allowed to visit or leave infected farms. Feed and bedding exposed to the infection are burned. Owners of slaughtered animals are reimbursed on the basis of utility value, appraisement being made by a practical stockman and an official of the federal bureau of animal industry. One-half is paid by the federal government and one-half by the state interested.

WHAT SAMPLING REVEALS

A herd owner may ascertain from the creamery that his average is 40 pounds of fat per cow for the month and yet have a dim idea that some of his cows are better producers than others, but probably few men are prepared for the veritable surprises encountered when they commence regular weighing and sampling. To take the case of two two-year-old heifers that freshened this spring, last month one gave 30 pounds of fat, the other gave 46 pounds. One five-year-old in the same herd of grade Jerseys gave 67 pounds of fat, and another five-year-old gave only 36 pounds. The owner would scarcely believe that one mature cow is thus earning, with fat at 27 cents per pound, $8.37 more than her stable mate in just one month. What will the difference be for the whole year? That is the crucial test.

Between two three-year-olds in the same herd, that both freshened in March, there was a difference last month of 19 pounds of fat, worth $5. Similar differences are to be found in many herds, illustrating very clearly that it is palpably unfair to take a general average of the herd unless they are decidedly more even in production than those cited above. Records of individual production alone can give this valuable information to the owner.

ANOTHER GREAT ONE

Superintendent Gardner of the advanced registry of the Holstein-Friesian Association writes:

"The Holstein-Friesian cow, Duchess Hengerveld Korndyke, has broken the record for fat production in the senior three-year class of the semi-official yearly division, by producing in 365 consecutive days 903.38 pounds fat from 22,897 pounds milk. She freshened at the age of 3 years, 9 months, 19 days. Her sire is Judge Hengerveid De Kol, No. 43964; her dam is Duchess De Kol Korndyke, No. 52905. She was bred by Mr. O. A. Stubbs, Lewisville, Indiana. In the senior three-year class of this division she displaces Queen Juliana Dirkje, whose record for 365 days is 817.38 pounds fat from 19,124.3 pounds milk. Five different supervisors were employed in the conduct of this test."

The profits in dairy farming under present conditions come only to the men who have the grit and gumption to weed out their small-yield cows.

Increased Separator Efficiency

The best cream separators often fall below expectation simply because they are not properly lubricated. The separator is your most delicate farm machine. It demands an oil especially made to suit it.

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is just such an oil. It is made for separators and it is of just the right body to quickly reach those finely adjusted, close fitting bearings. It protects them from wear. It enables your separator to deliver *all* the butter fat. It eliminates unnecessary repairs and lengthens the life of your machine. There is no better oil made for your separator. Ask your dealer for it.

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INTRODUCED AND ENDORSED BY THE U. S. AGRICULTURAL DEPT. AS NO OTHER GRASS HAS EVER BEEN BEFORE. PRODUCES MORE GRAIN AND BETTER HAY THAN ANY OTHER FORAGE PLANT KNOWN. UNDER ORDINARY CONDITIONS YIELDS 300 to 600 LBS. OF SEED AND 3 TO 6 TONS OF CHOICE HAY TO THE ACRE THE SAME YEAR. GROWS WHEREVER SORGHUM DOES. ALL LIVE STOCK PREFER IT TO ALFALFA. QUALITY OF HAY EQUALS TIMOTHY. SOW IT ANNUALLY WHERE DESIRED IN ROWS OR BROADCAST. ADAPTED TO ALL SORTS OF SOIL. RESISTS DROUGHT. STANDS RAIN. IT TAKES 2 TO 6 LBS. OF SEED TO THE ACRE IN DRILLS AND 10 TO 30 LBS. BROADCAST. LAST SPRING THE SEED SOLD FOR $2 TO $4 PER LB. IT IS NOW SELLING FOR $1 PER LB., AND IS SURE TO GO HIGHER BEFORE SPRING AS THE SUPPLY OF SEED IS LIMITED. WE WILL SEND PREPAID BY PARCEL POST 1 LB. OF GENUINE SUDAN SEED FREE FROM ALL OTHER SEED FOR $1—IN LOTS OF 50 LBS. OR UNDER, NOT LESS THAN 1 LB. CONSIDERED. LARGER LOTS SHIPPED BY FREIGHT CHEAPER PRICE. BETTER ORDER NOW AND BE SURE OF GETTING YOUR SEED AND SAVE MONEY BESIDES. ALL WHO SOW SUDAN GRASS SEED ANOTHER YEAR WILL MAKE BIG MONEY. INSTRUCTIONS HOW TO PLANT WITH ORDER.

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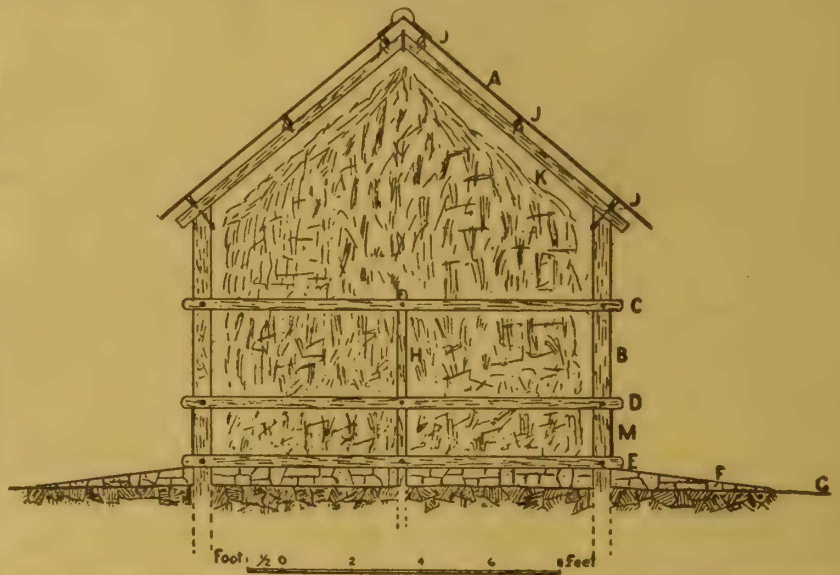
ECONOMICAL FEEDING

Referring to an issue of the Cultivator of some months ago in which we gave illustrations and description of the method of feeding beef cattle on the ranch of the Porterville Alfalfa Company, Mr. S. McIntosh, director of irrigation of the department of agriculture of South Australia at Adelaide, writes of methods carried on in that country. He says:

"As a distant subscriber to your valuable publication I desire to congratulate you on your paper. The issue of August 13 is of particular interest to us who are interested in irrigation in this state, and throughout Australia generally, in the matter of cover crops on our orchards and vineyards, particularly the former. I have sent the issue in question to the editor of 'The Murray Pioneer,' Renmark, so that the irrigation subscribers generally may have an opportunity of becoming acquainted with what you are doing in the matter of cover crops in California.



AUSTRALIAN METHOD OF COVERING AND PROTECTING HAYSTACK.
Stock allowed to feed and framework may be moved in as fast as stock clean up the hay.

"The issue of August 6 also contains an interesting article on feeding cheap alfalfa to high priced beef. This is a matter that has had my attention for a number of years past, and under separate cover I am forwarding you a copy of bulletin issued by this department in which special attention is called to the system I adopted a number of years ago. You will note that the system recommended is, if anything, an improvement upon that adopted by the Porterville Ranch Company. At present we are carrying a very considerable number of poor cattle on alfalfa or lucerne which is forked indiscriminately into the feeding enclosures. Sufficient fodder is carted in to last from two to three days, and when the cattle have eaten as far as they can reach the balance is then forked out to them. We have dispensed with a roof but some farmers consider that a temporary roof justifies the expenditure."

From Bulletin No. 59, Lucerne Cultivation and Management, we quote from an article written by Mr. McIntosh:

"Some years ago (1904) I adopted a method of stacking both green and brown hay intended for general feeding, which I can with confidence recommend as being most economical and satisfactory in every sense, more particularly in regard to labor saving in feeding. The accompanying sketch gives the reader a general idea of how to proceed. The stack should be erected on fairly high and hard soil, and the foundation should be "made up" with the backscraper or grader as shown on the plan, to allow a good drainage. Narrow stacks of not more than from 10 feet to 15 feet in width are recommended, with an eight-foot or nine-foot wall. After the hay has settled, or when it is required for use, posts are erected eight feet apart around the whole structure, or as much as it is intended to use at once, at about nine inches clear of the stack. If no roof is required the length of the posts is six feet six inches by about four inches diameter at the small end; they are sunk two feet in the ground. A breast rail (four inches by two inches hardwood) is then bolted in eight foot lengths to the posts with three-fourths-inch bolts two feet from the ground surface. Below this any straight timber or lumber can be used for the mangers. Galvanized iron cases suit admirably. At a further height of two feet six inches, i. e., the top of the posts, a head-rail of four-inch by two-inch hardwood is bolted to the upright with three-fourths-inch bolts. You have now a one-sided manger with the haystack as the feed supply. The stock feed direct between the breast and head-rails, and any loose straws drop into the nine-inch vacancy, there to remain until the face of the stack is fed down to the full depth of the manger. When the stock have eaten out the stack to the full length of their reach the fence is simply shifted into the face, or the hay can be raked down from the roof into the now perfect feeder. Personally I prefer removing the fence, as you are then sure your stock have an ample supply of feed at all times. Should a roof be required posts ten feet long are used. In the event of no suitable round timber being procurable, six-inch by six-inch jarrah or red gum is suitable. The tops of these are cut off at an angle to which the lower rafter holding the galvanized iron (in eight-foot sections) is bolted with a five-eighths-inch bolt. The two top rafters (one on either side of the roof) meet, and one-half-inch bolts fasten the two opposite roof sections together. In the accompanying sketch ridge-capping is shown, but it is not necessary. Both fence and roof are made up of eight-foot sections, with the end of the rafters and rails scarfed, so that they may be fitted into the adjoining section and the whole structure bolted together. This permits one side of the roof being removed to facilitate the erection of a new stack on the same site, or the ready removal of the whole affair on to a new site, in the event of the stock fouling the original stand. Where the stack is roofed, the hay must be raked or thrown into the feeder after the first face has been fed off. The three principal factors in favor of this system of feeding are; the great saving in labor; the complete saving of the leaf, the minimum waste after stacking; and the insurance against short food supplies as long as the stack is available. The three-inch by two-inch V. D. L. slats between the posts are to prevent cattle from horning each other. In the event of sheep feeding from these stacks a lower manger is required and the hay is forked into it.

"Another method of treating cut lucerne is what is known as "sandwiching." Where clean, fine wheat, oat or barley straw is procurable this is certainly the most economical system of feeding. The lucerne is cut as for hay, but instead of letting it dry, it is stacked within 48 hours of cutting. Proceed as follows: First, a two-foot layer of clean straw is put down on a bed of dunnage, over which is sprinkled from 15 to 20 pounds of dry salt per ton of straw. A two-foot layer of semi-green lucerne is then added, with further additions of straw and lucerne until the stack is finished. The moisture from the lucerne gradually soaks through the straw layers, carrying the salt with it in solution; and thus the whole body is permeated with the natural juice of the lucerne. My experience is that the stock are just as partial to the straw thus treated as they are to the lucerne itself. I cannot recommend lucerne for ensilage, as it is much more valuable as green fodder or hay, added to which it is not a perfect silage plant."

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THE SMITH SALE

The George A. Smith sale of pure-bred Holsteins resulted in the change of ownership of 71 head at an aggregate of $16,970, or an average of $230. The cows averaged $326.87 while bred heifers averaged $260 and even heifer calves commanded an average of $165.58 and bull calves $151.11. These averages were all much greater than those of Mr. Smith's first sale.

The highest priced cow was purchased by P. Rietkerk for $505, while T. J. Crist purchased the top-notch bull calf at $300 and the McAlisters the highest yearling heifer at $400.

The highest bred heifer was purchased by R. F. Guerin at $410.

The following sales were made: A. F. Blanton, Kerman—Segis Ormsby Fobes of Glennaire and Homestead Walker De Kol Pietertje. A. B. Comfort, Hanford—Wisconsin Ormsby De Kol. T. J. Crist, Tulare—Lorenzo Clothilde Beets Ormsby, Lorenzo Clothilde Hengerveld, Kekke Pietertje Pontiac Princess 2nd, Lorenzo Johanna Lad Princess, Segis Ormsby Homestead Fobes. J. W. Guiberson, Corcoran—Viall De Kol Johanna Korndyke, King Ormsby De Kol, Mutual Oak Homestead Fobes. R. F. Guerin, Visalia—S. V. I. Anna Vestner, Susan Ormsby 2nd, Princess Anne Hengerveld. W. H. Ginn & Son, Corcoran—Grace Blacken De Kol, Riverside Eva, Romantic Lass, Preciosa Crane. J. M. Henderson, Jr., Sacramento—Segis Oak Tritomia Fobes, Judge Hengerveld Paul Wayne. S. A. Spencer, Waukena—Church Hill Clyde King 2nd. T. J. Gilkerson, Stratford—Bonnie Maid of La Siesta 2nd. J. C. Lake, Los Angeles—Susan Ormsby, Lydia Oak Segis, Queen Mechthilde De Kol, Pauline Countess Netherland De Kol, Inka De Kol Pauline Segis, Queen Niko Pietertje De Kol, Perfection Pietertje Walker, Eva Riverside of Tuolumme, Aaggie of Jacinto. P. Rietkerk, Corcoran—Lady Oak Segis, Pietertje Aaggie De Kol Maid, Lillian Homestead De Kol Piet. H. R. Steelman, Exeter—Dita. V. W. Shore, Tulare—Fidessa Pet Lyons, Pet Riverside of Tuolumne. A. V. Taylor, Hanford—Pietertje Lass Hengerveld. E. J. Weldon, Sacramento—Inka Pauline De Kol Pietertje 2nd. Carl Wiechmann, Corcoran—Lass Segis Oak Fobes. D. Wiechmann, Corcoran—Segis Ormsby Colantha Pietertje. A. G. Williams, Jr., Fresno—Netherand Beauty Mechthilde. Whittier State School, Whittier—Edna Drosky, S. V. I. Preciosa Jacinta, Riverside Pet 2nd. McAlister & Son, Chino—Aspirante Tritomia, De Kol Ormsby Colantha, De Kol of Glennaire, Lillian Walker Hengerveld, D. K. Pauline Aaggie De Kol, Empress Aaggie De Kol, Princess Mechthilde of Woodland, Lillian Johanna De Kol, Aaggie Pietertje Mechthilde Niko, Albino Walker Hengerveld, Albino Homestead Walker De Kol, Alka Hengerveld Pietertje, Edna Hengerveld, Colantha Ormsby, Colantha Ormsby 3rd, Eidessa of Glennaire, Colantha Ormsby 4th, Romeo Aaggie Pet, Daisy Oak Segis, Aaggie De Kol of Glennaire, Lady Segis Pietertje Hengerveld, Bonnie Aaggie Maid, Bessie Oak Segis, Eva Gernert De Kol, Lady Segis Clothilde Ormsby, Tritomia of Glennaire.

Proper cooling of cream just as soon as it comes from the separator is most essential, stirring the whole lot every time fresh cream is added to the quantity. Frequent churning prevents the cream from becoming old and musty or moldy by the development of bacteria.

STABLE MANURE

Of all the fertilizers known for improving and keeping up the fertility of farm land, stable manure is most practicable to use, and in the long run it is the best for enriching the soil. Manure from animals fed on rich feed and bedded with litter in sufficient quantity to keep them clean, has always verified the claims of its advocates.

Stable manure by reason of results obtained where it is used to improve soil, has stood the test of ages in comparison with all other materials containing plant food.

Soil fertility and profitable farming will continue season after season so long as sufficient quantities of both solid and liquid stable manure of good quality is intelligently applied to the soil. Not only is it possible under this system of soil improvement to harvest in a temperate climate during a single season one huge crop of hay, but two, three or even four crops.

The day has arrived in agricultural pursuits where a money making farmer cannot afford to haul inferior fertilizers to his field.

The business of farming at present demands the richest plant food at the least cost, plant food that will return the largest profits. Rich stable manure has neither an equal nor a competitor. It contains not only the plant food elements, nitrogen, phosphoric acid and potash, that the high-grade commercial fertilizers possess, but at the same time excels them in vegetable material for making humus, since no commercial fertilizer contains humus making material to any extent worthy of the name. Rich stable manure is acknowledged to be very efficient in promoting the work of bacteria so necessary in crop production. The manure from animals when applied to soil improves the texture and mellowness, increases the water holding capacity, promotes better aeration, and increases the soil temperature. Its mechanical effect on heavy clay land is most beneficial, as here its use helps the close texture by loosening the packed soil grains, and thus increases the productivity of the soil.

HOGS GOOD HAY GRINDERS

There does not appear to be any more practicable method of grinding hay for hogs than by feeding the hay via a good rack.

A few years back some enthusiast wrote a story about alfalfa tea, which he said was the finest thing on earth; that the tea extracted all the animal food in the alfalfa and at the same time, left the plant food for the soil. By giving the tea to the hogs they would gain their weight, and then you could scatter the stewed alfalfa back on the land. The story found its way into one of the eastern publications and the western experiment stations have been flooded with inquiries ever since.

Increasing the productivity of the herd is a slow process but it can be done if the farmer is studious and persistent, says J. B. Lindsey of the Massachusetts Agricultural College. Breeding pure-bred bulls to the best grade cows is probably the most economical method to follow. Better care and more feed are needed by a herd averaging 7500 pounds of four per cent milk per year than one averaging 5000. Nevertheless, the higher the yearly production the less will be the cost per quart of milk.

Goat and sheep men are endeavoring to secure a state bounty for coyotes.

If interested in deep well pumping you can have a copy of this book by writing for it. It contains information about the POMONA DEEP WELL PUMP, and also valuable data on irrigation subjects. When writing ask for "Catalogue No. 54C," and state the depth of your well and its location.

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is of the plunger type with reciprocating plungers, traveling in opposite directions, the one with a slow up-stroke, the other with a quick down-stroke, and a substantial "lap," thus having the descending plunger in place ready to receive and carry its load before the ascending plunger has reached the end of its stroke, traveling a substantial "dead" distance together, the one receiving, the other giving up its load gradually. Cylinders, valves and all other parts are made of the best materials that money will buy, and are built to stand up under heavy deep well lifts and to give years of satisfactory service.

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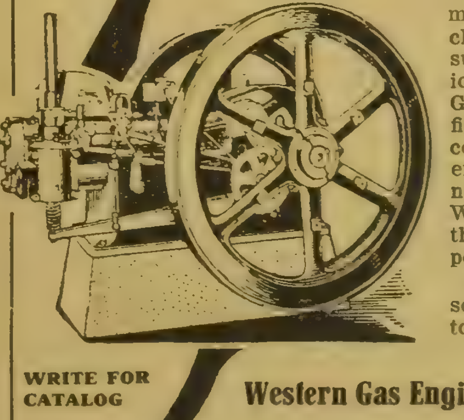

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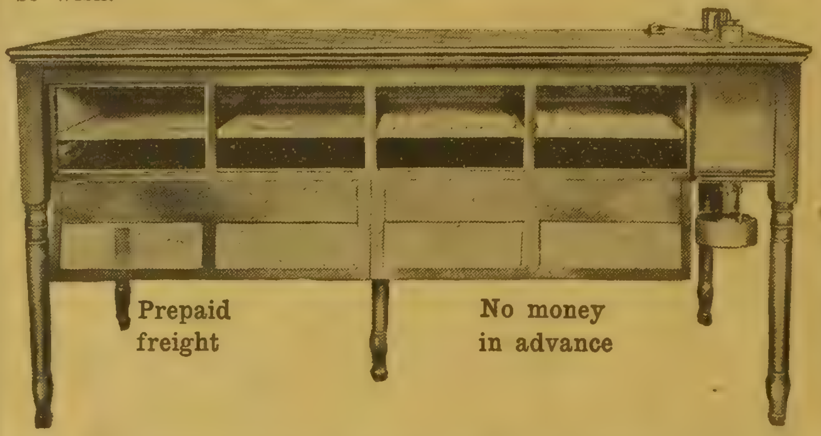

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Poultry for Profit

THE COLOR OF EGGS—A COMPARISON

Written for California Cultivator
By Jean A. Koethen

LOS Angeles is one of the few large cities in the country that makes no discrimination as to the color of eggs. In San Francisco the "extra" must be not only fresh and sweet and large, it must also be white. In Boston, the city of baked beans and brown bread, it is quite natural that the "extra" should be a brown egg. In New York the white egg is preferred.

This discrimination as to color in the large markets has, of course, nothing whatever to do with the quality of the eggs. It is made in the markets of New York and San Francisco, which are controlled by the white egg producers, to keep out the brown egg of the middle west, and in Boston, I presume, to keep out the white egg of New York and Pennsylvania. This is perfectly understood by commercial poultrymen; it is not always understood by the novice who is considering the selection of a breed.

Such a distinction is quite natural and proper under the circumstances. The commercial poultryman, who invariably keeps White Leghorns, is probably the most important man in the great billion dollar poultry industry, and if the brown eggs, which are produced more cheaply on the farms of the middle west than they can possibly be on the egg farms of either the Atlantic or the Pacific coast, are dangerous competitors, they must be discriminated against. This does not mean, however, that it is necessary to insist that the white egg is a better egg.

L. E. Keyser, the veteran New York poultryman and writer, says that three objections are made to the brown egg: That eggs with shells of mixed colors do not present so attractive an appearance when displayed for sale as all-white eggs. This is probably true, but when we talk of brown eggs we do not mean "eggs of mixed colors." There are various shades of brown and tinted eggs, running all the way from a faint cream to a deep, reddish-brown, and the producer who mixes all shades together when he markets them simply does not know his business. The first thing for any brown egg producer to do is to breed his hens to lay the same shade of egg, and until he has accomplished this, to market different shades in separate packages.

I think no one would be so biased as to maintain that a carton of dead white eggs of uniform size and shape is any more attractive than a carton of creamy white eggs, or brown eggs or pink eggs, also of uniform size and shape and tint. To my mind the white eggs look pale and sickly beside the rich pinkish-brown of a fresh-laid Orpington egg, but this is a matter, no doubt, of liking the things we are used to.

2. That brown eggs can be less readily candled than white eggs, which means a loss of time to the dealer. This might be recognized as a valid objection to the brown egg if all markets and dealers uniformly paid a higher price for white eggs. Until they do, we may pass it by as unworthy of comment.

3. That brown eggs cost more to produce than white eggs. This may be true. I have not the data to disprove it, though as far as I can see, by comparing my two breeds, the white egg hens, when they are laying well, eat about as much as an Orpington. When they are not laying, they eat less than an Orpington that is not laying. Some writers declare that a Leghorn will lay on hardly more than half the feed required by a Rock or an Orpington, but I have seen it stated in a report of the egg-laying contests at Storrs, Connecticut, that the Leghorns eat fully as much as the Rocks. A Rock or an Orpington will eat more than she needs if she can get it, and these large hens usually do better laying on a restricted diet.

It is no doubt true that Leghorns can be kept intensively and on very little ground, as the heavier breeds cannot, and this is their one indisputable claim to supremacy as commercial egg producers. It is not at all certain that they eat less or that they lay more eggs—that is, as a rule—nor do they lay as large eggs as some of the heavy breeds, but they can be kept in close confinement and in large numbers and have been more carefully bred for egg production.

4. That the brown egg cannot be tested out of the incubator before it is so old as to be unfit for food. Mr. Keyser says the man hatching white eggs "can test on the third day while the infertile eggs still have a food value, while dark eggs have to remain in the machine until unfit for any purpose and are a total loss."

Either Mr. Keyser has never incubated any brown eggs or he is just talking "hot air," as the boys say. I have many and many a time tested out Orpington eggs on the seventh, eighth or even the ninth day and used them fried for breakfast next morning and no one could tell that they were not fresh eggs. In many the yolk was less inclined to run than it sometimes is in a fresh laid white egg.

Having disproved of the very worst objections that can be made to brown eggs, we are in a position to consider the points in their favor.

In Bulletin 128 of the United States department of agriculture, a table is given comparing eggs of various fowls and also the white and brown eggs of hens. The figures for the latter are as follows:

White shelled eggs as purchased: Refuse, 10.7 per cent; water, 65.6; protein, 11.8; fat, 10.8; ash, .6; fuel value per pound, 675 calories. Brown shelled eggs as purchased—Refuse, 10.9; water, 64.8; protein, 11.9; fat, 11.2; ash, .7; fuel value per pound, 695 calories.

The brown eggs, it will be noticed, contained a little more protein and considerable more fat. They have in general rather a larger yolk, which would be expected since they contain more fat. On the other hand the white egg, according to tests made at Cornell, has a somewhat heavier shell. The bulletin concludes: "The figures quoted in the table show that there is practically no difference in composition between hens' eggs with dark shells and those with white shells, although there is a popular belief in some localities that the former are 'richer'."

My own preference for the brown egg is based not on its composition but on its size and weight, texture of shell and the thickness of its white. The brown egg has a harder shell, and when it is broken the yolk remains deeply imbedded in the white. When a white egg is broken the yolk often runs into the white. This does not affect the food value of the egg, but it does affect its appearance in the frying pan. Break a brown egg into the pan and the white puffs up about the yolk in a frilly sort of cup. Break a white egg and it spreads out and runs into its next neighbor. Since my attention was called to this difference I have talked with many women, women who raise eggs, women who buy them, and women who sell them over the counter, and the invariable word is, "give us brown eggs."

A year ago, being not altogether satisfied with the performance of my Buff Orpingtons, I let most of them go and brought eggs of a much boomed white egg breed. The two breeds have been laying side by side now since last March, so I have had a good chance to compare their eggs and I have been so disappointed in the white egg layers that I am selling them off and buying new Orpington stock. Of course no comparison can be conclusive. It may be that the Buff Orpington lays an extra large and hard shelled egg. I think that it does. It may be also that the white egg breed I have lays a particularly poor egg, or that it is a poor strain of the breed. The fact is, on the same soil, and with the same care and feed, the brown egg layers have laid a uniformly firm shelled egg with a good, stiff white and deep, yellow yolk. while the white egg layers have laid soft shells, thin shells, chalky shells and eggs with such thin watery insides that I was actualy ashamed to market them as first-class eggs. I have no use for an egg with a yolk that runs the day it is laid.

This fall I had an opportunity to compare the performance of Orpington pullets with pullets of my white egg breed of exactly the same age, and my Orpingtons are laying not only bigger eggs but more of them. The white eggs average an ounce and a quarter to an ounce and a half in weight, while the Orpington eggs run, most of them, two full ounces each. In other words the Orpingtons at eight and nine months of age are laying eggs which could go on the market as "extras," while the white egg will, for some time to come, sell as pullets' eggs.

I have never before been guilty of booming my own breed—indeed, I have not always appreciated it—but when Mr. Keyser declares patronizingly that, "there may be no material difference in the quality of the eggs, but the white eggs are the more appetizing and people are willing to pay more for this quality," it makes me a wee bit indignant. By all means let the white eggs command a higher price where they can, but don't pretend that it is because they are better eggs. We of the brown egg cult ask nothing but the truth.

RAISE YOUR OWN SUNFLOWER SEED

By Prof. E. B. Babcock.

The Mammoth Russian sunflower is a cultivated variety of the common wild sunflower of that portion of the middle west extending from Kansas to Mexico. Our wild California sunflower is another species which resembles that of the middle west in the numerous branches and many small heads, of no value as a source of commercial seed. Though the entire plant may be used for feeding dry or for ensilage, the seed of the cultivated variety is much prized for bird and poultry food and for the manufacture of oil. The Mammoth Russian variety has an unbranched stalk and a single large head with many large seeds. In Russia these seeds are used as human food.

Many California farmers plant Mammoth Russian sunflower to raise poultry food and frequently are disappointed by having their fields badly mixed with plants of a branching, small-headed type, even when they have taken the trouble to purchase new seed. This is due to the fact that sunflower seed is cheap and our seedsmen either import it direct from Kansas or contract with some California farmer to grow it for them, and in neither case does the grower of the seed take the necessary precautions against mixing with the wild plants. Obviously it is not profitable to raise a crop of sunflowers when one-half or even three-fourths of the crop turns out to be unprofitable branching plants, yet this has been the experience of many farmers.

But if it is practicable to raise your own seed, why not do so? That it is practicable will be seen at once when you understand the secret of seed production in the sunflower. The secret is this—a single sunflower plant will not set seed unless it is cross-pollinated with pollen from some other plant. Bees are the usual agents in this process. Knowing this secret, it is at once clear that if a seed grower allows wild plants to grow near enough to his Mammoth Russian field so that the bees work back and forth freely between the wild and the cultivated plants, it is certain that the seed he offers for sale will be badly mixed.

How shall the farmer proceed to raise pure Mammoth Russian seed? First, by selecting a seed plot as near the center of his place as possible and by taking pains to keep down any wild sunflower plants that appear as weeds. Second, by selecting the seed for his seed plot from Mammoth Russian plants that are separated as much as possible from wild neighbors. Third, by watching his seed plot before the plants begin to bloom and simply cutting off at the ground all plants that have any branches. This will insure pollination exclusively with Mammoth Russian pollen, unless a few bees come from distant fields of wild plants. By following this method for one or two seasons he can have a practically pure strain of seed, and by keeping up the breeding plot under

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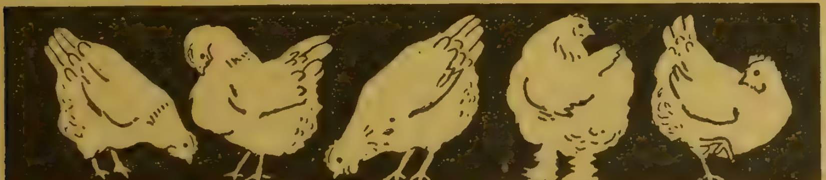

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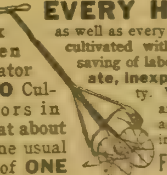

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these conditions he can plant fields of sunflowers anywhere without danger of loss from the influence of wild sunflowers growing as weeds on surrounding property.

FIRST EGG CIRCLE IN KANSAS

The first "egg circle" reported in the state of Kansas was organized in Lyon County in April, says the Spokesman Review. This organization has very appropriately been named the "Quality Egg Company." It is in fact a federation of egg circles, one in every neighborhood that wishes it, with headquarters and a central organization at Emporia. Every circle has its own officers—a president, vice president and secretary-treasurer.

The egg circle is one of the latest products of the movement for more effective rural cooperation. Its great advantage lies in solving the marketing problem. Strict rules are laid down as to gathering and caring for the eggs, so strict in fact that one is inclined to be skeptical as to whether they will be observed, remembering the conditions under which eggs are produced and marketed on the average farm.

But in the Quality Egg Company, a breach of the rules is punishable by the loss of the offender's membership, which means that the stamp with which the eggs are marked must be turned in. The rules specify that all eggs must be gathered at least once a day, and twice on very cold or very warm days. They must be kept in a cool, dry place and marketed at least twice a week. Only strictly fresh eggs are to be sent. Every member agrees to pen up or otherwise dispose of all male birds from June 15 to September 1.

Every Egg Can Be Traced

By means of the stamp every egg can be traced back to the farm from which it came, making it a simple thing to place the blame for bad eggs. Every circle in the federation is designated by a letter—A, B, C, D, etc., as far down the alphabet as there are circles. Members in the circles are numbered and every member's stamp bears the circle letter and individual's number. This stamp is placed on the large end of every egg before it is marketed. Thus, an egg stamped "A-22" signifies that it came from member No. 22 in circle A. Reference to the secretary's books completes the identification. The stamp costs a member 35 cents and membership dues are 25 cents, which constitutes all the expense there is connected with becoming a member.

New neighborhood circles are being organized from time to time. There is a widespread interest in the movement and what the ultimate size of the organization will be would be difficult to foretell. The number of members in a neighborhood circle is limited only by the facilities for collecting and marketing the eggs. At present members living at convenient distances from each other are taking turns about in delivering the eggs in Emporia.

Headquarters of the organizations are maintained at Emporia in a four-room building with barn and hitching sheds in the rear. The building contains an office for the manager, two packing and work rooms and a rest room for women. The manager's salary is provided for by means of a fixed commission allowed on all eggs handled.

All eggs are paid for at the rate of one cent a dozen above the prices paid by Emporia commission houses. At the end of every month accounts are squared and the balance accumulated as profits is prorated to each member according to the quantity of eggs he or she has marketed.

All eggs sold by members are graded. Grade No. 1 consists of clean eggs of a uniform color, well packed in neat cases or cartons, and weighing not less than 24 ounces to the dozen. Grade No. 2 includes clean eggs neatly packed and weighing not less than 21 ounces to the dozen.

Every case of eggs sent out by the company bears the name "Quality Egg Company" conspicuously lettered upon it, and also contains other advertising literature. By this means and by keeping up a high quality of product it is hoped that a widespread reputation for these eggs will be built up.

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Softland trees, perfect in quality, grown by us. Lowest price. Will plant if desired. Consider some exchange—now is most favorable time to make contract for next spring planting. Write or phone today for prices. Phone 559. Ward Realty Co., San Dimas, Cal.

We Have Made a Specialty of Placentia Perfection Walnuts on native black root for a number of years, and are offering the finest trees we have ever grown this year. 80 per cent of our stock is eight feet and up. The scions used were taken from trees in our large orchard that have made a very high record for the past five years. Good Ancestry Pays. Nursery at Villa Park. Hugh T. Thomson, Orange, Cal., R. F. D. 1.

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For Sale—At Corning, 4,000 Mission Olive trees from three to seven feet in height. Cuttings selected from the best producing orchards at Corning. Trees mostly two years old in March. Address Midland Counties Land & Irrigation Co., First National Bank Bldg., San Francisco.

Now is the Time to book your order for fig trees. "My Specialty." 25,000, seventeen varieties. Extra fine. Well rooted, straight and branched, one and two year old trees. Price list on application. C. C. Terbush, R.F.D. 2, Box 543, San Gabriel, Cal.

Grafted Walnut Trees on Northern California Black Root. Special price, must be moved. Placentia Perfection, Chase, Eureka, Mayette, El Monte Large, etc. Both phones 6971, Whittier Nursery, 803 West Philadelphia St., Whittier, Cal.

The Walnut Nursery has a fine lot of grafted walnut trees again this season, Chase, Eureka, Mayette and Placentia Perfection. Order now and get the best. W. A. Litten, Prop., R. F. D. No. 2, Whittier, Cal. Home phone 7863.

Walnut Trees—Eureka and El Monte varieties a specialty, also Franquette and Placentia. Write for prices and description of stock. Personal inspection invited. Eureka Walnut Nursery, Montebello, Cal.

Potrero Heights Walnut Nursery—Placentia Perfection Walnuts a specialty. Native Black Walnut roots. Get my prices and order early. Address A. H. Jessup, San Gabriel, Cal., Route 2.

The 1200-Acre Nursery, growers of 1500 varieties of trees and plants. OREGON NURSERY CO., Orenco, Oregon. Sales office, 522 Chamber Commerce, Los Angeles, Cal.

Budded Avocados in all the leading varieties, also Feijoas, Guavas, and Mangoes. Write for prices. Edgemont Avocado Nursery, R.F.D. 2, Box 213, Pasadena, Cal.

Franquette and Mayette grafted on Northern California Black, 3 to 10 feet. Prices right. Special discount on large orders. Sunset Nursery, 525 W. San Carlos St., San Jose, Cal.

Fine Placentia Perfection Walnut Trees, grafted on Native Black. Also late Valencia and Eureka Lemon trees. Prices reasonable. Write for prices. Perry Lewis, Box D, Tustin, Cal.

Fig Trees—2000 Calimyrna (Smyrna) and Caprifig trees for sale. Make offer for one or all. Strong, well grown stock. W. F. Lowe, Roberts P. O., Cal.

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For Sale—2000 Late Valencia Orange trees, two years from bud. 1800 Washington Navel, one year from bud, A1 stock. Address, H. H. Eshelman, Soldiers' Home, Cal.

Walnut Trees, Wilson Wonder, Franquette—Budded on Northern Black Walnut root. Eucalyptus trees in large quantities. Prices right. Ekstein Nurseries, Modesto, Cal.

For Sale—Excellent citrus trees, Valencia 1600, Navel 1500, Eureka lemons 2400, ⅝ up. Price loose, 15c; baled, 23c F.O.B. Budded with fruit buds after freeze. Address B. C. Dodson, Glendora, Cal.

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Royal and Tilton Apricots, Phillips and Tuscan Cling Peaches, 5 to 8 feet, $20 per 100; $180 per 1000. K. B. Utigaard, Hemet, Cal.

Budded Citrus Trees and seedlings at fair prices. Will take auto or land. Butler's Morning Side Nursery, P. O. Box 45, Lamanda Park, Cal.

Citrus Nurseries, Murphy Oil Company, East Whittier, California. Selected stock for sale; inspection invited.

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Strawberry Plants—Gold Dollar, Clark Seedlings, Magoons, Wm. Belt, Marshalls, Goodells, Early Ozark, and new Oregons, $2.50 per thousand. Thoroughbred plants. Mr. John Christiansen, R. F. D. 2, Canby, Oregon.

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For Sale—12 White Plymouth Rock hens, 1½ years old, and 5 March pullets same breed, all hatched from eggs bought direct from Emerson & Mumford, the blue ribbon stock of the Coast, $2 each or $1.75 each for the lot. Also a 108-egg Jubilee incubator and Reliance brooder, in A1 condition, for $20.00, prepaid; cost $29.00. W. A. Lee, Covina, Cal.

Macfarland Strain White Leghorn eggs $5 per 100, chicks, Jan., Feb., $12, afterward $10, order now, any quantity. Cockerels $2. White Rock eggs, chicks, cockerels; write for prices. Big plant, best stock, lowest prices. Newton Poultry Farm, Dept. 3, Los Gatos, Cal. N. B.—See article about us by Prof. Adams, U. C., in October Poultrycraft.

White Leghorn baby chicks from McFarland Strain, from two years old hens; there is no better laying strain than this. You cannot succeed in the poultry business with poor stock. I guarantee safe arrival by express. My specialty is pleasing my customers. Chicks $10.00 per 100. Book your order for Spring delivery now. $2.00 per hundred with the order. J. W. Lyon, Gardena, Los Angeles Co., Cal.

S. C. White Leghorn Baby Chicks—From my pure-bred flocks S. C. White Leghorns, carefully selected for laying and Standard qualities, $9.00 per 100, $85.00 per 1000. A first class chick at a reasonable price. Eggs for hatching, $5.00 per 100, $45.00 per 1000. Correspondence solicited. J. R. Heinrich Poultry Yards, Arroyo Grande, Cal.

Incubator Chicks—White Rock, Rhode Island Red, Black Minorca, White, Brown and Buff Leghorn, and Indian Runner Ducks, high class stock—Standard bred and Hoganized. Send for booklet of prices and make your contracts now. Mahajo Farm, P. O. Box 597, Sacramento, Cal.

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Rhode Island Reds and S. C. W. Leghorns; greatest laying strains in California. Baby chicks: Reds, $15.00 per hundred; Leghorns, $12.50. Rainescourt Poultry Ranch, Zelza, Cal.

Berry Plants and Belgian Hares delivered free. Brahma Cockerels from Oakland and San Francisco Winners. Catalogue free. Old Hickory Supply Co., Dept. 4, Capitola, Cal.

Pullets—Thoroughbred stock—Golden Buff Leghorns—Sheppard's strain Ancona—White Leghorn—White Minorca hens—baby chicks and eggs. Prices reasonable. Sand Ridge Hatchery, Kerman, Cal.

For Sale—16 to 17 dozen Rhode Island Reds and Barred Plymouth Rock Pullets, 5 and 6 months old; also few cockerels same age. Inquire Geo. A. Sill, Watsonville, Cal.

Booking Orders for Hatching Eggs from S. C. White Leghorns, utility birds; selected stock, $6.00 per 100; $50.00 per 1000. No baby chicks. Pine Tree Poultry Farm, Los Gatos, Cal.

Barred Rock Cockerels—(Hawkins Royal Blue Strain) ready for mating, also Barred Rock, R. I. Red, Buff and White Orpington day-old chicks every week. Enoch Crews, Santa Cruz, Cal.

Baby Chicks (White Leghorns)—Shipped on approval. Examine at your home before remitting. No weak ones charged for. Schellville Hatchery, Sonoma, Cal.

Barred Plymouth Rocks—Winners at New York, Kansas and California shows. Eggs and choice stock for sale. C. H. Vodden, Los Gatos, Cal.

Petaluma Hatchery—Now booking orders for December and January. Early chicks bring big money. Send for circular. L. W. Clark, Petaluma, Cal.

S. C. Black Minorca cockerels; choice birds, $2.00 up. Also a few Buff Minorcas. Mrs. N. Schillings, Alpaugh, Cal.

Barred Rocks—Only a few fine breeding cockerels for $3.00 each. G. L. Hawley, Madera, Cal.

HELP WANTED

Wanted—3 or 4 berry growers to come to SANTA CRUZ, CAL., to grow berry plants for us under contract for 5 years; will also buy all the fresh berries when we put up our new berry-drier in 1916. We will guarantee that you will double your money each year. We need 1,000,000 berry plants grown each season, and also use 100 tons of berries for our drier. Send for particulars to SANTA CRUZ BULB & PLANT CO., 8 NEW ST., SANTA CRUZ, CAL.

We have an unusual proposition to make any young man or woman who is planning better things for the future. You must have business education. You can earn board, room and tuition. Telegraphy, stenography, bookkeeping, English branches. Write now. Mackay Business College, 910 Main St., L. A.

LIVE STOCK

Ohio Improved Chester White (O. I. C.) Entire herd immunized against hog cholera. Nothing but immunized stock sent out. Extra fine lot of fall pigs, both sexes, ready for shipment during December and January. Three herd boars used. All stock crated and registered. Make reservations now. C. B. Cunningham, Mills, Sacramento Co., Cal.

Grape Wild Farm Thoroughbreds—Guernsey Bulls of A. R. Breeding. BERKSHIRE HOGS. Finest herd in the state All ages for sale. A. B. Humphrey, proprietor. Mayhews, Sacramento Co., California.

For Sale—Young Hampshire boars of good stock; yearling GUERNSEY BULL from Imp. Lord Kitchener. Dr. J. W. Anderson, 503 First Nat'l Bank Bldg., Berkeley, Cal.

For Sale—Young registered Berkshire boars and sows; fine, strong stock. Boars ready for service—January. Stanislaus Ranch Co., Crows Landing, Cal.

Duroc-Jersey Boars—Four months old; registered. Fine individuals. Silver-Spangled Hamburg roosters. Prices reasonable. Tribble Nurseries, Elk Grove, Cal.

Thoroughbred Berkshire Boars of all ages from developed and large-boned hogs. Riccomi Bros., Mountain View, Cal.

Glenview Poland China—Stock for sale. Chas. R. Hanna, R. F. D. No. 3, Riverside, Cal

M. H. Locke Co., Lockeford, Cal.—Choice young Jersey bulls for sale.

FARM LANDS FOR SALE

For Sale—40 acres Blythe, Riverside County. Canal 40 feet wide bordering on north and west side; water right with each acre and plenty of it any day. Can grow wheat and cotton same year or wheat and corn two crops a year. Best of soil; 5 acres in alfalfa, balance in cotton and milo maize. Come and see or write. $150 per acre. W. C. Mayhew, Blythe, Riverside County, Cal.

Apple Orchards—Large and small, in the only apple producing section in California. The greatest section west of Missouri River. Write for booklet. Geo. W. Sill & Co., Watsonville, Cal.

For Sale—640 acres school land in San Bernardino County, all level land, good well on adjoining land. $1.00 due State. Price $4.00 per acre. Address 262 W. 5th St., Glendale, Cal.

For Sale—800 acres, large and small tracts, Pittsburg County; farming, pasture, oil and gas land. $5 to $25 per acre. Write JOHN CAVANAGH, McAlester, Okla.

A Splendid Chicken and Fruit Ranch, improved, 80 acres, very cheap at $3000. Address owner, A. Frederikson, Santa Maria, Cal.

120 Acres—Yolo County; house, barn, wells; 200 cords timber; $20.00 per acre. C. Johns, Yucaipa, Cal.

MISCELLANEOUS

Free for Six Months—My special offer to introduce my magazine "INVESTING FOR PROFIT." It is worth $10 a copy to anyone who has been getting poorer while the rich, richer. It demonstrates the REAL earning power of money, and shows how anyone, no matter how poor, CAN acquire riches. INVESTING FOR PROFIT is the only progressive financial journal published. It shows how $100 grows to $2200. Write NOW and I'll send it six months free. H. L. Barber, 430, 28 W. Jackson Blvd., Chicago.

Musical Instruments—All kinds tunes, repaired, bought, sold, exchanged; expert violin repairing; bow 75c. Bargains in used instruments. Lindberg Music Co., 219 W. 2nd St., Los Angeles, Cal.

"Smith's Pay the Freight"—To reduce the high cost of living, send for our Wholesale to Consumer Catalogue. Smith's Cash Store, 112 Clay St., San Francisco.

TURKEYS

Turkeys—Bourbon Red, White (Holland), Mammoth Black. The large, hardy, popular varieties and quick money makers. Fine Xmas presents for lovers of poultry. Order early and get choice selection. Males $8.00 and $10.00; females, $5.00. Mrs. B. Hocking, Guasti, Cal. Winner of firsts and specials, Los Angeles and Sacramento State Fair.

For Sale—Mammoth White Holland Turkeys. Mature hens and toms. ALSO young stock from five distinct pens, headed by toms from yards of leading breeders of this breed in the state. EGGS IN SEASON. Orders given prompt attention. Prices on application. Address H. McKusick, Box 733, Calexico, Imperial Co., Cal.

Mammoth Bronze Turkeys—Strong, vigorous, well marked toms and hens from the best blood of prize winning and utility stock. Prices reasonable. Geo. A. Smith, Corcoran, Cal.

Giant Bronze Turkey Toms from prize winning stock; weigh over 20 lbs. at 8 months. Write for prices. Mrs. Nellie Hart, Holtville, Cal.

Thoroughbred White Holland and Bourbon Red Turkeys. E. A. McKinley, Ukiah, Cal., R. F. D.

WANTED

Wanted—Position care of private place, orchard or with nursery; 20 years' California experience in flower and vegetable gardening, fruit and ornamental trees, chickens, etc. Best references. Abstainer. Address Box A, Cultivator Office, Los Angeles, Cal.

Farms Wanted—We have direct buyers Don't pay commissions. Write describing property, naming lowest price. We help buyers locate desirable property Free. American Investment Association 12 Palace Bldg, Minneapolis, Minn.

Walnuts—Choice seedlings, 10c up; also grafted Chase and Placentias. Now contracting citrus and avocados for spring planting. Magnolia Nursery, Whittier, Cal.

Wanted—To hear from owner of good farm or unimproved land for sale. Send description. Northwestern Business Agency, Minneapolis, Minn.

Wanted—Work on dairy farm by a married man, 10 years' experience. Can give references. Address L. H., 789 E. 39th St., Los Angeles, Cal.

RABBITS

For Sale—New Zealand Rabbits. "The best meat producers." A grand bunch of fine, red, half-grown youngsters, 1 buck and 3 does for $5.00. Also mature stock. Your chance to secure a start of this splendid strain at small cost. Shipped anywhere. Standard Rabbitry, Santa Ana, Cal.

New Zealand Reds—16 ribbons this year. Improve your stock with prize winners. Bucks ready for breeding $3.00 to $5.00 each. Mrs. C. A. Richey, R.D. No. 8, Box 557, Los Angeles, Cal.

New Zealand Reds—Scored and sold on merit. Investigate. Our Catalogue is free. Caldwell Bros., Los Angeles, Cal., Box 613

HORTICULTURAL PRINTING

Catalogues for the seed and nursery trade. The live stock and poultry industries are a specialty with us. Two thousand illustrations to select from. Write for prices and samples. The Kruckeberg Press, 237 Franklin St., Los Angeles.

DOGS

Pedigreed Scotch Collie Pups four months old. Males $5.00, females $4.00. C. Keaton, Route 5, Box 58, San Jose, Cal.

BEES

Beekeeping Pays Big—Price list, bees, instruction books, etc., free. Spencer Apiaries Co., Box 14, Nordhoff, Cal

THE PEACH AND HOW TO GROW IT

(Continued from Page 611)

When they are delivered to the purchaser the trees are full of fruit spurs developed by pinching and pruning.

Thinning

When I see well shaped trees, properly thinned, I am almost tempted to go call on the owner and pat him on the back for his far sightedness. How many such orchards does one come across? It is a crying shame to see orchard after orchard, branches all broken in many instances and loaded down with a lot of stuff two-thirds of which should be fed to the hogs. Where is the economy in producing such fruit? You don't build up any business if it is in a depressed condition by selling an inferior product, and least of all a dried fruit business. Any grower who argues that he cannot afford to take care of his fruit is making the mistake of his life when he does not thin his peaches. You do not have to stretch your imagination very much to figure out the difference in cost of cutting a 50-pound box of peaches in which each peach weighs close to a pound, and one in which the peaches will not weigh more than one-half a pound each. There are twice as many pits in such fruit, and in connection with all this the fact that it lacks both the size and the quality of a well-grown peach makes it a very inferior product, for when dried it is practically all skin without any flesh. And what does the packer do? He won't buy it at all if the market is off, or if he does buy and ship it it is to a cheap trade that knows nothing about high class California dried fruit. It costs seven cents per 50-pound box to pick peaches. The cutting, sulphuring and drying and putting into the sweat boxes will average one and three-fourths cent per pound when dried. The loss in weight, depending on the variety of fruit, varies from five to seven pounds green to one of dried.

Dont' overdry. This is a common fault, and the loss of weight is no small item. Just as the fruit passes out of the mushy stage entirely—and this occurs after five to seven days' exposure, if the temperature ranges around the 100 degrees mark in the shade—stack your trays and allow the drying, until the fruit is scraped off into sweat boxes, to proceed from this time on in the shade. When the peaches are slightly leathery to the touch they are dried sufficiently.

Canning Peaches

No argument is required to advise the grower that it is imperative, in order to have merchantable stuff to deliver to a cannery, that all the fruit be two and one-fourth inches and over in diameter, otherwise it will not be received. The average price over a period of ten years for canning peaches is not less than $25 per ton, and in years where there is a short crop prices go skyward, and it is not uncommon for a grower to receive from $50 to $60 per ton for this fruit. Such prices mean to a grower—where trees range from six to 15 years—returns of from $250 to $400 per acre. Returns like this pay amply for a number of years of low prices.

Varieties

If there is any one country in the world where fruit growing has resolved itself into a commercial proposition, it is right here in California. Experimenters who are devoting their time to originating new varieties should bear in mind that the desideratum to be reached is not the developing of a long list of novelties which may have a somewhat different colored skin or a shape slightly different from that of varieties already grown; this is not the goal which we should seek. It has been demonstrated time and again that it is not a string of varieties which is necessary to make fruit growing a success, but rather a few kinds standardized, because they meet the requirements necessary for success.

Today the Alexander, Admiral Dewey, Elberta, Foster, Hales Early, Heath Cling, Lovell, Muir, the Orange Clings, Phillip Cling, Salway, Sims Cling and Tuscan Cling cover the entire field for peaches required for shipping fresh, drying and canning.

The improvement demanded in our shipping peaches is to secure varieties which will mature earlier than those already grown in the early types and of better carrying qualiies. In the dying peaches, varieties which will dry heavier, have smaller pits and firmer flesh will be welcomed as valuable acquisitions.

In canning peaches—and this probably applies to clings more than anything else—varieties with more flavor, absence of red at the pit, greater firmness of the flesh and a rich golden color, when canned, will contribute to elevating the canning industry.

It seems difficult to understand, but it is a fact nevertheless, that there is no active demand for either dried or canned white peaches. The McKevitt and Heath Cling are exceptionally high class canning peaches, but their white color, which to my mind is in no way detrimental, militates against their sale. There are many strange anomalies in the fruit business. All the yellow cling peaches shipped out of California are branded "Lemon Clings," because this has become a fixed trade name. As a matter of fact this peach is absolutely lacking in the essentials necessary to make a first-class canned peach and has not been grown in California for years, and nowhere else, for that matter, where its inferiority as a fruit is understood.

Planting

Trees should never be planted closer than 24 feet apart unless they are interplanted with some other variety of fruit with the expectation of taking the peach trees out at some future time. The trees as they stand in the nursery rows have the limbs removed to a point about 12 inches from the ground. Instead of removing all those limbs when topping the tree to 20 inches, these laterals should be cut back to two inches, so in case the buds in the main body do not start in the spring the smaller branches will.

COST OF UP-KEEP

We have asked several as to the cost of keeping up the automobile and find that there is wide diversity of opinion. One will say, "It simply costs gasoline and oil, and not much at that," while another will state that the cost is prohibitive. Why the difference? Perhaps the first is a bit enthusiastic and, like the teller of a fish story, enjoys the making of an especially good showing. Aside from that feature there is no question but that it makes a great difference who runs the machine, and more as to who repairs it. A large auto dealer told the writer with great emphasis that without question the auto owner who did his own repairing would get much longer life from his machine than where the repairing is done in the shop. That seems strange, but the opinion is confirmed by many. The owner who takes pride in the appearance and running of his auto knows the moment the first bolt loosens, and it is attended to at once. The man who runs his machine as long as it will stand up and keep in action, then has a general overhauling, has permitted serious injury to his car which the overhauling will not overcome. As one dealer remarks: 'The stitch in time does not save nine with the auto but, in fact, it saves ninety-nine." Therefore, let every auto owner care for his own machine and care for it when needed rather than when forced to.

But as to the cost, assuming that the machine will run 6000 miles a year, with ordinary care, it will take a set of tires per year. Tires are guaranteed for 3500 miles, but with ordinary treatment they are probably good for at least 6000. A 34x4 tire costs $29.35, therefore one may readily see the year's cost of tires, though it is not probable that even on the 6000-mile basis all the tires would be out of commission the first year, so that perhaps four times $29.35 would be too high. The cost of tires depends a great deal on condition of roads, air pressure and amount of care exercised by the driver. Nothing destroys a tire quicker than allowing it to run on the rim. Some maintain a pressure of 65 to 80 pounds constantly. In any case, always keep the tires hard.

The average mileage per gallon of gasoline is probably not far from 15. On the basis above mentioned this would mean 400 gallons of gasoline per year. At, say, 15 cents, there is $60 for gas, or about one cent per mile.

The requirements for oils will probably be not far from 15 gallons per year, that is, the machine will run approximately 400 miles per gallon and the cost be about 75 cents. This would mean an additional $11.25 per year.

Then repairs, outside of new tires, might be $5 per month. They also might be $50 per month, therefore no figure even close to approximating can be given on this point. With a new machine, however, the first year's repairing should be almost nil. Consequently, how much it costs to keep an automobile it will be impossible to say. Several auto owners have replied in an offhand way that the costs enumerated, together with depreciation, interest on investment, and all, would be not far from $300 per year, or $25 per month. Depreciation depends upon the viewpoint, that is, the tradesman who is talking of taking over a used machine will count on from 35 to 40 per cent depreciation for the first year. We imagine, as a matter of fact, that 20 per cent would be nearer the real, true depreciation, but so many of us wish up-to-date models that trading is very general, and on that basis the first year's depreciation should be considered. However, if 40 or 45 per cent were deducted for the first year, then a depreciation of 10 per cent would probably be conservative thereafter, but where one buys a machine to keep it, 20 per cent, or the turning of the machine to the scrap heap in the period of five years, would be a safe basis.

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We want every farmer and landowner to have our illustrated circular. It describes the machine, its principle and advantages over all others. It gives testimonials from many farmers proving what it will do on wheat, alfalfa and other crops. It contains valuable information on how to prepare the soil for better results. Send for this circular today, whether you want to buy or not.

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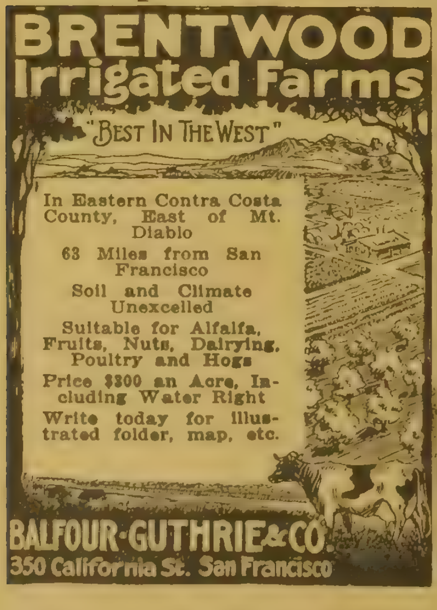

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Veterinary Queries

Answers in this column by Dr. Wm. Petrie, 2714 South Harvard Blvd., Los Angeles, are without charge. For immediate mail answer remit $1.00. In writing questions give full symptoms or particulars of injury of animal.

Barley Beard Fistula

Have a horse that has a running sore under his jaw. It was caused by barley beards and has been this way for over a year although he has been working right along and has not suffered. I have been injecting peroxide, creolin, etc. This sore runs into the throat or mouth, for when I inject anything some of it comes out of his mouth. It is no better than when I commenced treating him. Would like to know how to treat it and what medicine to use.—Subscriber, Santa Susana.

Sometimes when barley beards work through at the root of the tongue it leaves an open tract all the way and the saliva flowing through keeps it open. Soon a false membrane grows around the canal and it will not heal. You must get rid of that membrane by cutting it out or by putting in a caustic that will burn it out. Try injecting nitrate of silver, 20 grains to the ounce of water. It will never heal while you are using peroxide.

Fistula Near Ear

Would you kindly inform me through the Cultivator what can be done for a colt that has a small hole in the head between the left eye and ear, as shown on enclosed picture? A watery liquid runs from the hole constantly. Do not know what caused it.—Subscriber, O. R.

Frequently those small fistulas on a colt near the ear are there from birth. They usually lead to a small bony tumor and in that bony tumor a small ill shaped tooth is often found. Or if it is of recent origin it may have been caused by the pressure of the halter. In any case the treatment is to cut down to the bottom and remove anything you find there. Also cut out the tube through which the fluid has been flowing. Then you have just a common wound to heal and by keeping it clean nature will do the rest.

Sows Fail to Breed

Two sows that farrowed a month ago had each two dead pigs that were not more than half grown and partly decayed. A third had but three pigs and refused to own them. Two were bred the third day but are in again now. The third one bred three weeks ago has a white, rather thin discharge. Several gilts have been bred but are now in again. Male about a year and a half old, pureblood Poland China in good condition and apparently in good health. Hogs all running on alfalfa pasture and feeding sow's mik and grain. Do hogs have contagious abortion and do you think dead pigs had anything I could have prevented?—Subscriber, Rio Bravo.

If the sows that had dead pigs had others that were all right then probably they were hurt in some way while carrying the pigs. Hogs might have contagious abortion, but the symptoms you give do not indicate that these had it. You bred them too soon after farrowing and the male was probably infected from the dead pigs and carried it to the others. You may have some trouble geting rid of it. They should be treated by injecting a solution consisting of carbolic acid one dram, alcohol one ounce and water one pint. The male should also be treated. After a month or two you might be able to go ahead again all right.

Abscess Following Puncture

Two months ago one of my cows became bloated on alfalfa and it was necessary to puncture her. For two weeks the wound did not seem to bother her but since that time there has been a continuous discharge from it, sometimes light and sometimes very copious. The discharge is usually thin but sometimes it is a thick pus and very offensive. Aside from the sore she seems all right. Every day the wound is washed off with hot water and soap, after which a disinfectant is poured on it. What shall I do with it?—Subscriber, Farmington.

I presume the abscess is only under the skin in the flesh. Cut the opening larger so you can wash out the cavity freely. Use a sharp knife. Push it into the wound an inch or more and cut a gash two inches long or more. Cut down and draw the blade out as you cut. The opening should be long enough so it will drain freely. Wash your hands clean and with one finger examine the cavity to the bottom. Wash it out well with plenty of warm water. Then inject into the cavity a pint of warm water with a teaspoon of carbolic acid in it, letting it run out as fast as it will. This should be done once a day until the wound heals clean and healthy. Then just see that it is clean until it heals.

A SCHOOL—COMMUNITY CENTER

Less than ten years ago the 10,000 acres or so of the Packer Ranch in Glenn County was owned and operated as one big grain ranch. Today the Packer tract, one of the parts of the Sacramento Valley irrigation project, is one of the best examples in California of what subdivision and irrigation will do for a country. Dozens of families are developing productive dairy and fruit farms and doing the other things that make a high class citizenship and develop a state and nation.

One of the most striking evidences of this development is the beautiful new Codora school, located on the Packer tract which makes up a large part of the Codora school district. The building was recently completed at a cost of over $12,000, and is located on grounds five acres in extent.

There is now an attendance of 69 pupils who are taken to and from school by automobile at the expense of the district.

Aside from being a fine building and modern in every respect, it is planned to be a real community center as well. There is a large assembly hall with a fine stage, a room well heated, well lighted and well ventilated. And beside the children's playgrounds there has been made provision in the grounds for a big area for hitching sheds for horses and for parking automobiles, a ball ground, an orchard of specimen trees and plots in which pupils studying the elements of agriculture can grow crops.

It will be the center of interest for this thrifty and growing community, a frequent meeting place for all the people, where the newcomers from all parts of the country will meet and become better acquainted with each other and with the old-timers who have lived in the country for years. Social intercourse and a discussion of troubles and problems and the mutual working out of the solutions thereof are factors in the upbuilding of every community, but often these things are not accomplished for want of a suitable meeting place. By the wisdom of the leaders of this community the meeting place problem is settled for all time. And as the years go by and the trees and shrubs and flowers increase in size and beauty the Codora school community center will continue to be more and more a popular meeting place for those who have created it. The example can well be duplicated in every rural community in America.

A Tip on Almonds

On this continent Almonds are grown only in California. The American market alone demands *four times* the present supply.

With practically an unlimited home market and a monopoly of the product

Plant Almond Trees if you are seeking a real money-making investment. We have an extra fine lot of trees growing on Bitter Almonds, Peach, and Myrobolan Root, but as there is usually a shortage of trees on Bitter Almond, place your contract immediately—don't delay.

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Scalefoe Kills

Red, Black and Purple Scale also the Red Spider and other insects, worms and bugs.

Does not hurt the plant or tree.

Quart, 20c; 2 quarts, 35c; gallon, 50c; 5-gallon can, $2.00, freight paid.

Special prices by the barrel.

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In selecting paint, or white leads to be used for paint, take only those which have a well-established reputation.

Questions and Answers

THE EDITOR AND STAFF

Questions to be answered in this department should be received at this office one week before reply is expected. Write plainly on one side of the paper and sign full name and address. Unsigned communications receive no attention.

Water Commission

Answering a query as to water commissions:

We understand that all disputes as to water rights will be settled by the water commission. In fact, that is the reason for the enactment. Of course no commissioners have as yet been appointed excepting that ex-officio, the governor, and the state engineer are two of the five, but as soon as they are appointed doubtless a method of procedure will be formulated. As to cost, we are unable to say. Page 42 of the amendments to the consitiution and proposed statutes, which are sent to every voter in California prior to election, gives the full text of the measure.

Milch Goats

Can you give me information regarding milch goats? Which is the best breed? Do they require much feed? Do they do well on alfalfa pasture? Has the Cultivator ever published any articles on milch goats?—Subscriber, Orosi.

The Cultivator has published articles several times on the milch goat. For instance, in the Cultivator of January 8, 1914, we printed an article by Winthrop Howland of Redlands on the value of goat's milk. Goats do well on alfalfa and of course the amount of feed required depends upon the quantity of milk being given. There are several breeds, the Toggenberg perhaps being the most popular in the United States. The milk usually retails in large cities at about 25 cents per quart, but unless delivery can be made to some of the larger hospitals it requires a special line of trade to be developed.

Plowing

The coming year I wish to plant apricots on rather sandy land. Should this be plowed at the first rains or how shoud it be fittted for orchard planting?—Subscriber, Halcyon.

If this land had been seeded to vetch or some other legume, or possibly rye, in September or October, and then plowed deeply just before planting time it would perhaps have been in best condition. If no green crop has been planted, however, we would do the final leveling and plow as soon as possible. This would throw up a loose soil into which water and air would penetrate freely and in case of excessively heavy rains it will take in more of the water than would be the case if the soil is allowed to lie hard and compacted. We would follow each storm with harrowing. By tree planting time, which, with apricots by the way, will be within a few weeks, this ground should be in fine condition.

Hens Not Laying

Can you tell me why my hens are not laying after a month or two of laying? They are fully feathered and in fine shape every way as far as I can see. I feed barley and blood meal soaked over night in hot water, dried up with bran, in the morning, corn or wheat at night and they run on the lawn in afternoon. Good, pure water to drink and also scraps from the kitchen to eat.

A sudden change in the weather, such as we have experienced the past two weeks, will often check the laying of hens, especially if they are of the lighter breeds or exposed to rain or wind. A change in their roosting quarters also checks laying for a time. You do not say how much blood meal you use with the morning feed of bran and barley, but the ration contains too little ground grain and probably too little animal protein. Beef scrap or fish scrap is generally used rather than blood meal, because it is less concentrated and therefore more easily digested. Suppose you try the following very simple dry mash, keeping it before the hens at all times: Two parts bran, one part ground barley, one part middlings, one part corn meal, one part alfalfa meal, one part beef scrap, one-half part fine bone meal, a little charcoal. In addition to this feed sprouted oats or barley in the morning and wheat with a little whole corn at night and give your table scraps and as much green feed as possible at noon. If you have sour or

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Minimizes Scale Troubles, Controls Red Spider, Destroys Fungous Growth, Tones and Vitalizes the Trees.

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Kills the Insects, Destroys the Eggs, Deadens the Fungus Spores, Is a Tonic, Fertilizer and Vitalizer for the Trees. Is the best general clean-up Spray there is. Most efficient and used in larger volume for peach Blight year after year.

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skim milk feed the dry mash moistened with the milk at noon instead of the table scraps. You might cook your table scraps and mix them with the mash, if you wish.—J. A. K.

Grape Shipments

What is the percentage of increase in grape shipments from California between 1903 and 1911? What is the percentage of increase in raisin production in California? What countries produce the most raisins?—Subscriber, Ontario.

The number of cars of table grapes shipped from this state during 1903 was 1804; in 1904, 1451; in 1908, 3819; in 1910, 4948; in 1912, 6357; in 1913, 6363. California's raisin crop in 1884, which is the first year's figures we have access to, appears in pounds, at 3,500,000; in 1885, 9,400,000; in 1886, 14,460,000; in 1890, 38,000,000; in 1895, 91,000,000; in 1900, 90,000,000; in 1905, 87,000,000; though some years preceding this last year the production reached as high as 120,000,000; in 1910, 115,000,000 pounds; 1911, 120,000,000; 1912, 185,000,000; 1913, 130,000,000. Exports increased from some 3,000,000 pounds in 1898 to over 28,000,000 pounds in 1913. Imports, on the other hand, decreased from 53,702,220 pounds in 1884 to 2,579,705 pounds in 1913. In the production of raisins, Fresno County stands first with 94,000,000 pounds, Tulare second, with 25,000,000; Kings third, with 20,000,000. After Kings there is a heavy drop down to less than 4,000,000 pounds produced by Sutter County, which is fourth. San Bernardino crowds close up to Sutter, however, in total production.

Orange Grove Neglected

I have taken over a neglected orange grove. The trees are covered, both leaves and stems, with a black mildew or rust. What is the best treatment to clean the trees, also to eradicate mealy bug which is thick between the fruit?—Subscriber, Almada, Portugal.

Here is a question for the farm doctor to solve. That is, there are probably many steps necessary to put this orchard in good productive condition. The first thing to do is to give a thorough fumigation or spraying to rid the trees of the black scale which is probably the cause of the "black mildew" or ordinary smut, a fungous growth which follows the honey dew exuded by some of the scale insects, aphis, or other pests. Within a short time after the fumigation or spraying, if well done, the fungus will disappear, probably with the first rain, though if it covers the fruit washing may be necessary in order to make it marketable. The next procedure would be with the soil. A heavy application of stable manure would be the best method of putting that in good live condition. Pruning to get rid of much needless wood and more wood which has been injured by the scale infestation might be necessary and would probably give a new top to the trees which would make new bearing wood, possibly next year and surely a couple of years later. At blossoming time the application of stable manure might be folowed with a complete fertilizer in which nitrate is in fair supply. This would help set fruit for the coming year. If these points are observed and general good care with deep culture of the soil is given for the next year or two it is probable the trees will be put in good productive condition.

Replanting Bulbs

Will you please tell me what to do with little bulbets that come close to the stem and almost out of the ground on some varieties of lilies? Also best fertilizer for them? — Subscriber, Covina.

Our inquirer does not say what kind of lilies she refers to, so it is impossible to give explicit information, but presumably breaking up the clusters of bulblets and planting individuals so as to give room for bulb development will result in a far greater number of flowering bulbs another year. If very small plant only an inch in depth but for well developed larger bulbs plant the usual depth, which may be five or six inches according to the variety and size.

The best fertilizer is probably any complete commercial fertilizer. At least do not plant bulbs too near to a mass of stable manure. If it is used it should be as a mulch.

Pruning Apple Trees

At the recent horticultural convention at Los Angeles a group of delegates were discussing tree culture and reference was made to the best season for pruning apple trees. One delegate maintained that such trees should not be pruned in winter if growing in a neighborhood where the temperature fell below freezing. He stated that he always pruned his trees after blooming, say from April 10 to June 1. He also said that he planted his trees just as they came from the nursery, that is, did not cut back, that he got better results by leaving the entire tree. As a beginner in fruit culture I would like to know the general practice in this matter.—Rancher.

There are all kinds of theories as to the growing of fruit, and strange as it may seem to some of us who have decided opinions along certain lines the fellow who does not agree with us often succeeds in raising quantities of good fruit. However we believe we are safe in saying that it is the general practice to winter prune and that better fruit is secured from trees which have been properly pruned at planting time, and thereafter regularly each year when the tree is entirely dormant. We believe the better practice is to top a tree at planting time back from 24 to 30 inches. We know that many farmers who plant trees feel that to cut away three-fourths of the top of a tree which has cost 20 or 30 cents is like throwing away that much money, but really all a tree does for the first three years is to form a foundation for fruit-bearing wood. Allowing this foundation to grow up into the air five or six feet and to be ill-shapen, as it often is when neglected, results in a short-lived tree and one more liable to wind and sun injury. The strong wood growth which is induced by winter pruning will give a mass of material which another dormant season will need to be cut off and probably more wood will be taken from the tree than will be left, but bear in mind a large stocky branch or "foundation" should be left for next season's growth to build on. We have heard those who do not believe in pruning say that it is as reasonable to amputate a man's arm that he may do better work as it is to cut off the branch of a tree that it may do better work. While that may prove a sharp reply in an argument it has not made good in actual practice, as is shown by observation of the more successful fruit growers.

Louis B. Stanton, attorney, 243 Wilcox Building, Los Angeles, will answer legal queries in this department.

Immediate mail replies cannot be given except where fee to Mr. Stanton is paid. When replies are wished in Cultivator address query to 115½ N. Broadway, Los Angeles.

Probating Will

How should an executrix of a will proceed? Is it necessary to employ a lawyer, and if so, how do they charge, a straight fee or a per cent of the estate? If the deceased had real estate in Kansas and California does the will have to be probated in both states?—Subscriber.

A will must be probated in all states where there is real property in order to convey the title. It is practically necessary to employ an attorney. The will must be proved, the executors appointed by the court, accounts of the administration of the the estate rendered, title to the property properly attended to and the executors finally discharged. The fee in probate cases is to a large extent dependent upon the character and condition of the estate. The statute allows a fee of seven per cent on the first $1,000, four per cent on the next $10,000, etc. Sometimes however you can obtain a straight fee.

Life Estate

A certain piece of property has descended by will as a life estate, the father leaving to his son all the rents, incomes, and profits thereof during the period of the son's natural life, but at the son's death to go absolutely to his children, share and share alike. Now this son has two children. One of the boys has sold his interest in his father's life estate. Is this transaction legal? Can the buyer of the right, at the death of the father, in any manner gain precedence over the remaining heir as to the disposition of the property or otherwise? What happens if the son who sold his right should die before his father? If this transaction is not legal is there a time limit in which it can be set aside?—Subscriber.

So far as stated the transaction is entirely lawful. The remainder in the property invested in the children, probably as tenants in common, the purchaser of the interest of the son steps into the shoes of that son and has an undivided one-half interest in the property. The remainder being invested in a son upon his death would go to his heirs or assigns. The title to real property may at any time be questioned, but to question a will opposition must be made within one year after probate. The statute of limitations as to real property is five years after the date of the acquisition of the right.

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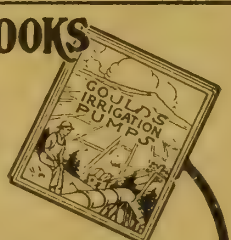

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The Household Department

SING A SONG OF CHRISTMAS

Sing a song of Christmas,
Gladdest day of all;
O'er the hills and valleys
See the splendor fall.
Sing of geaming holly;
Sing of mistletoe;
Sing a song of Christmas
Everywhere you go.

Sing a song of Christmas,
Holy, happy day;
Sing of Bethelehem's manger,
Where the Christ-Child lay.
Sing of love unbounded—
"Peace, good will to men."
Sing a song of Christmas
O'er and o'er again.

Sing a song of Christmas;
E'en on this glad day
There are griefs and heartaches
All along the way—
Hearts that wait the uplift
Of your note of cheer;
Sing a song of Christmas,
Strong and sweet and clear.
—Edith Virginia Bradt.

CHRISTMAS EVE REMORSE

I wisht (just tonight) that I didn't know's much
'Bout things that's important, like Santa and such.
I wisht I was ign'rant—as ign'rant as sis—
Fer t'ain't a bit funny to see fun you miss!
But boys, as a rule
Ain't easy to fool,
They can't believe always the stuff that they hear
'Bout Santa—the chimbly—and flyin' reindeer,
So—well, I've found out—but I'm sorrl! You bet
I wisht I was ign'rant like sister is yet!

Oh, dear, I feel bad! I feel now like I do
Right after a whippin' when pa's just got through.
I'd like to punch sis! She's as happy's can be!
How can she believe it? It surely beats me
Why girls, as a rule,
Is easy to fool!
Oh, if—if I hadn't 'a' stayed wide awake
To find out if some one was playin' a fake,
Tonight I'd be thinkin' it wasn't our paws,
But really and honest a true Santa Claus!
—Blanch Fargo Griswold in Smith's.

CHRISTMAS

When strife shall cease, when sin shall be no more;
When men shall meet as kin from every shore;
When evil passion in each heart is stilled;
Then shall the Christmas message be fulfilled.
—A. H. McQuilken, in Inland Printer.

THE GREAT MEANING

Lift up your eyes to the great meaning of the day, and dare to think of your humanity as something so divinely precious that it is worthy of being an offering to God. Count it as a privilege to make your offering as complete as possible, keeping nothing back, and then go out to the pleasures and duties of your life, having been truly born anew into his divinity, as he was born into our humanity on Christmas day. — Phillips Brooks, D. D.

Look up and not down,
Look forward and not back,
Look out and not in—and
Lend a hand.

A SURPRISE PRESENT

THE Christmas gift problem was no problem to Grandmother Deane. She always gave presents. The rows of stockings, big and little, which hung by the chimney in each Deane homestead was the work of her nimble needles; and every year each one held a fresh new pair—pink and blue in the tiniest, brown or black or gray in the larger ones. Nor were these practical tokens of remembrance confined to the circle of Deanes. As Grandmother listened to her minister expounding his text on the Sunday following Christmas, it was with a serene consciousness that a pair of her good gray socks helped warm him to his subject, and that the feet of his excellent wife and of the little flock that filled the ministerial pew almost to overflowing were likewise encased in the results of her labor.

It will readily be seen that Grandmother did not wait until Christmas was only a few weeks ahead before beginning to prepare her gifts. She began with the new year, and every day except Sunday a sock or a stocking large or small drew itself, stitch by stitch, from the glancing bits of steel.

Grandmother was a sociable body, and much of her knitting was done in the family sitting room, where there was no doubt of her welcome. But sometimes she kept to the seclusion of the two rooms—the best in the house—which were her own special domain.

She was there today, winding a fresh skein of gray yarn, though not for Christmas stockings. These, a goodly pile, were finished and waiting for the morrow in the lowest drawer of her bureau.

Grandmother never wound a skein of yarn without thinking of Ned—and she thought of him many times a day besides. It was an open secret that he was her favorite among all the grandchildren, but no one knew how much she had missed him in the five years that had passed since he went out into the world to seek his fortune, as he said.

"Ned wasn't cut out for a farmer," his father had decided sensibly, so he gave him his blessing and $100 and let him go.

He had been very good about writing, and always the letters were brought over from Oliver's for Grandmother to read. They had come from California and Alaska, from Montana, and from Texas—one even from Hawaii. On this the family had gazed with feelings akin to awe.

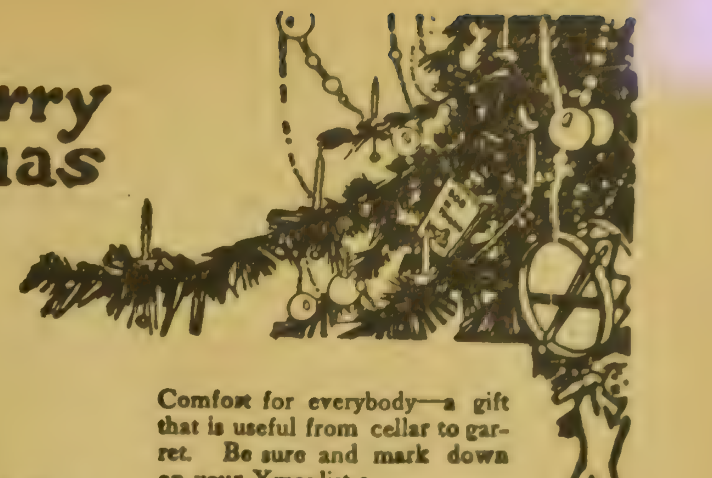
From these letters it appeared that the wanderer, while doing fairly well, was not accumulating a fortune, but he seemed always cheery and hopeful.

A few months before he had written from Arizona. "I've struck a piece of good luck here," he said. "Not money exactly, but something better. I'll tell you all about it when I come home."

"When I come home," repeated his mother mournfully. "When will that be, I wonder?"

But Grandmother did not look mournful. Instead an odd light came into her eyes.

"Now, don't you fret, Sarah," she admonished, in her cheeriest tone.



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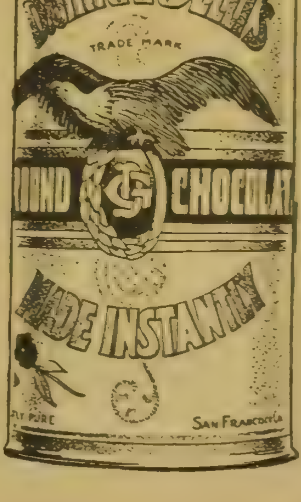

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"He'll be back inside a year, you see if he isn't."

"Well, I hope it will be a long way inside, then," Mrs. Oliver Deane responded with a sigh. "It seems as if I must see him right away."

When she was alone the old lady went to the bureau and took from the top drawer a little package of letters—less than a half dozen in all—addressed to herself. So worn were they with handling that they were almost ready to fall in pieces.

She read each one again, from beginning to end, then laid them back, thinking with a smile of how Ned would laugh if he could know how often she had read those hastily written letters.

Every year at Christmas time there had come a box of gifts from Ned and in it there was always something nice for Grandmother. And every year when they knew where to find him a box had gone from home, and in it there was always a pair of the soft, warm socks. This year they had not known where to send.

Since the letter from Arizona Grandmother had kept her own rooms more closely than ever before. Robert and Nancy wondered at this, but as she seemed well, and in excellent spirits, they did not worry over the matter or annoy her with questions or remonstrances.

The winding of the yarn brought Ned so strongly to Grandmother's mind for the reason that, from the time he was a little fellow until he went away, he had so often held the skein for her. When he was small she always kissed him when the task was done, and gave him a bit of candy or a few raisins. Then there came a time when it was evident that he thought both candy and kiss were superfluous, and they were withheld without remark. But by and by he would kiss her of his own free will, and say a few loving words that brought gladness to her face and a glow to her heart. The gladness and the glow came back today as she placed the skein on the chairs and began to wind.

But she did not work long. She was uneasy and could not settle herself at a task of any sort. So she moved restlessly about, doing unnecessary little things and going every few minutes to the window. Nancy found her there when she came in to sit a little before it was time to get dinner.

"Looking for snow, mother?" she cried gaily. "Well, I think it's coming. Looks as if we might have quite a storm, don't you think? We don't want anything to prevent our going to Oliver's tomorrow, do we?"

"No, indeed," Grandmother replied with energy, coming back to the fire. "I believe I am 'lotting on that tree as much as the children."

"That's a good deal," laughed Nancy. "Still they're in a fix. They can't decide whether to have their presents on the tree or in their stockings as usual.

"I don't wonder they hate to give up the stockings. How I used to enjoy hanging mine, and emptying it in the morning. Such fun! Well, I tell the children they can't eat their cake, and keep it too, and they're quite worked up over the matter."

"Yes, I know," laughed Grandmother. "They've been talking to me about it. I told 'em they'd better hang up their stockings. But they'll have something on the tree too. Sarah 'll see to that."

"Robbie was over awhile ago," said Nancy. "He says there hasn't come anything from Ned. That's odd. He always sent a box before, you know, and in good season too."

A funny little smile played abut the old lady's mouth. "Maybe there was a storm somewhere that blockaded the railroad," she responded cheerfully. "Ned will be heard from, never you fear."

"O yes, I think so. There are the children," as the outer door opened and shut noisily. A shrill cry rose on the air. "And they've waked the baby. Now they may take care of her," and Mrs. Nancy hustled away.

As the day wore on Grandmother's restlessness increased. Several times she started to wind the yarn, then impatiently pushed it aside and went to the window, sat a few moments by the fire or began to arrange the treasured ornaments on the old-fashioned what-not and mahogany table.

While engaged in this occupation for the third or fourth time she gave a sudden start, letting a china shepherdess fall to the floor where she lay, forlorn and unheeded, with a broken arm, while Grandmother stood holding to the back of a chair and straining her ears to listen.

Only a few moments—then there were steps coming to her door, then a tap and Nancy peeped in, her eyes shining, her face flushed and eager.

"Here's a gentleman asking to see you, mother," she cried. "Shall I show him in?" Then she was pushed aside and a tall, sun-burned, bearded young man strode in and took Grandmother into his strong arms.

"You know me, don't you, Grandma? Aûnt Nancy didn't at first, but I knew you would. Glad to see me, aren't you?" and he gave her a bear-like hug which made her gasp for breath.

"The folks at home seemed to be too, and they're mighty pleased with the family present I brought, I can tell you. They all think it's the best yet. You're to have a share in it—a good big one. I thought of bringing it with me, but concluded to make you wait till tomorrow. I'll bet you'll be as surprised as you were to see me."

"I shouldn't wonder," Grandmother made answer demurely. "Surprises are nice," she added with the same odd little look about the mouth.

Ned now picked her up as if she were a baby and put her into the old, well-remembered rocker. Looking around next for a seat for himself, he spied the skein of yarn.

"Hello!" he cried to it. "Shake! Haven't seen you for an age, but you look natural as life."

(Continued next week)

What does it matter, gray sky or blue,
If love's in the heart, and the heart be true?

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Some Christmas Dinners

CHRISTMAS DINNER

Turkey, gravy, dressing, mashed potatoes, sweet potatoes, potato salad, sweet and sour pickles, olives, celery, cranberry jelly, apple salad, pumpkin pie.

Cranberry Jelly—Two cups cranberries, 2 cups sugar, 3 small or 2 large apples. Cook together until apples are tender and strain through a sieve. Then add sugar and heat enough to dissolve and melt it. This can be moulded in individual moulds if desired.

Eggless Pumpkin Pie—One cup pumpkin for each pie, 1½ cups milk for each pie, ½ cup sugar for each pie, 1 tablespoon flour, just a little heaping, for each pie, or you can use ½ tablespoon cornstarch instead of flour; cinnamon to suit taste. If you use canned milk, for four pies use two cups of milk and four of water. Very desirable these hard times.

I am sending you my Christmas dinner menu, that has been carried out and will be again this year.

My plan for preparing it so I won't have much to do on Christmas day is as follows: The day before Christmas I dress my turkey the first thing and soak it in strong salt water till after dinner. Then I put it in the oven and partly roast it. I let it stand over night in the roaster, as it is aluminum, and finish roasting it the next day.

After my turkey has been dressed I make my potato salad, bake my pies, make my cranberry jelly and mould it in individual moulds. After supper is over I fix my table just ready to set, and for breakfast we use the kitchen table. The next day, or Christmas, all I have to do is to prepare both kinds of potatoes, clean my celery, make my apple salad, set my table and finish roasting my turkey, make my gravy, and it is ready to serve with no more trouble than any company dinner.—Mrs. J. C. Rogers, Fullerton.

CHRISTMAS DINNER

Oyster soup, bread sticks, salted almonds, olives, radishes, grilled sardines, potato balls and parsley butter, roast goose with cider apple sauce, glazed sweet potatoes, stewed celery or onions, endive salad, French dressing, plum pudding with sauce, red and green mints, black coffee.

Roast Goose—A green goose, from three to four months old, is a great delicacy and is cooked like a game bird, without stuffing. Season inside and out with salt and pepper, put half a white onion inside to absorb any strong taste, dredge the outside with flour and roast in a hot oven for about an hour. Serve with boiled white onions and apple sauce. For an older goose, which should not be more than a year old, use the time honored stuffing of potatoes and sage. After thoroughly cleaning and washing the bird in soda water, remove all the fat that can be reached from under the skin or inside. This may be saved and tried out to use later for goose grease.

To make the stuffing boil for 20 minutes or half an hour a half dozen potatoes; peel and mash, adding to them a tablespoon of salt, a teaspoon of pepper, a teaspoon of powdered sage and two tablespoons of white onion, minced and fried yellow in butter. Mix these ingredients lightly together, then bind with two tablespoons of melted butter. Season the goose on the inside with salt and pepper, stuff and truss. Dredge with salt and pepper and a liberal allowance of flour. Dry on a rack in a dripping pan and put into an extra hot oven to roast. So soon as it begins to color pour a pint of boiling water under the rack and begin basting the fowl. Baste and dredge with flour every 15 minutes and cook fully two hours. When well done and thoroughly browned put on a hot platter. Skim off the fat in the dripping pan, stir in a tablespoon of flour, then add a cupful of hot water or stock to make the gravy, strain and serve.

In preparing the Christmas dinner much annoyance and confusion may be avoided by making all possible preparations before hand. The goose should be dressed a couple of days before and left to hang in a cold place. The plum pudding should be made ready to be reheated when needed. A few days before Christmas place all the ingredients on the kitchen table, around which different members of the family may gather and join in the preparation, thus making it one of the main features of the merry making. One may pare and chop the apples, another crack the nuts and another chop raisins and still another cut the citron and in half an hour or so the pudding is ready for boiling. The red and green mints are home made and are prepared days before needed. The cider apple sauce is made the day before being used. The table linen, china, glassware and silver are carefully inspected, all broken or damaged pieces being replaced in time. The table decorations of holly are gathered from the mountains a week before needed and arranged at leisure.—Miss A. Butcher, Healdsburg.

CHRISTMAS DAY MENU

Cream celery soup, toasted wafers, roast turkey wtih dressing, creamed cauliflower, peas in potato cups, fruit salad, cranberry jelly, ripe olives, sweet pickles, hot buns, English plum pudding, tinted sauce; salted almonds, mixed candies, coffee, tea, sweet milk.

Cream Celery Soup—Cut up bunch celery very fine. Cover with water. Boil till all strength is out, drain off liquor, add thick cream or canned milk to make desired quantity, add butter, salt and pepper to taste. Serve with toasted wafers.

Roast Turkey with Dressing—Prepare turkey two days before needed, salt and hang in cool place. The night before Christmas day rinse off salt and stuff with the following: Stale bread crumbs, enough to nicely fill the bird, grated or rubbed very fine; one cup beef suet chopped very fine, several sprigs of parsley chopped, two stalks celery chopped, salt and pepper to taste. A few nice oysters improve it. Use no water or milk, as the chopped suet and juices from turkey in cooking will moisten the dressing sufficiently and be much lighter than when mixed soft. Fill bird and place in turkey roaster or double cooker, sew up openings, cover all over with finely chopped suet, sprinkle on salt and pepper, put no water in pan where turkey is, but in the bottom pan, place cover on tightly and it will need no basting. Set aside till morning. It should go into oven by 8:30 o'clock. Have oven quite hot at first so as to keep in juices, when slightly browned cook for three hours with slow fire, longer if not tender. Half an hour before removing turkey from oven lay link of sausage around turkey in pan, let bake crisp and brown. The two make a pleasing blend. Remove turkey and sausage to platter, garnish with sprigs of parsley, strain gravy to remove lumps, thicken and add sweet cream or canned milk. After cooking turkeys other ways for years I was taught this method by a little lady, a native of the Isle of Man, and I consider it superior to all others.

Peas in Potato Cups—Cook potatoes, season, mash fine, form into little shallow cups, brush over with cream, put in oven to slightly brown; just before serving fill with peas that have been cooked, drained and seasoned to taste.

Fruit Salad—Prepare dressing several days before needed in cool weather. Dressing: Take half cup vinegar, fill cup with water, put in pan, set on stove, add pinch salt, four tablespoons sugar, small lump butter; let boil, take two eggs, good teaspoon flour, beat light, add to the boiling mixture, beat fast to keep from lumping, boil up well and set away till needed. Thin with sweet cream or canned milk when used to thickness of good cream. Take apples, oranges, bananas, two of each, peel, slice fine, lay on lettuce leaves in dishes, sprinkle on top walnut meats chopped fine, spread on dressing and serve at once.

Cranberry Jelly—Almost cover quart cranberries with water, cook soft, run through fruit strainer, press out all pulp with spoon, return to kettle; to every cup juice add three-fourths cup sugar, cook till thick, pour into tumblers with small bottoms, a helping in each glass; let cool, run a knife blade around to remove from glass, spread on glass platter, garnish with parsley.

English Plum Pudding—Valencia raisins ¾ pound, Sultana raisins ½ pound, currants ¾ pound, sugar ½ pound, flour 6 ounces, bread crumbs 6 ounces, candied peel 6 ounces, chopped suet ¾ pound, half nutmeg, 2 apples chopped, 5 eggs, cup almonds, blanched and chopped fine; 1 tablespoon salt. Take stout cloth, dip in boiling water, rub inside with flour, put in the pudding, tie loosely, put into boiling water, boil 7 hours. This will keep indefinitely.

Tinted Sauce—One cup sugar, 3 tablespoons flour, 2 tablespoons butter, work together, pour on boiling milk (or water) to right consistency, add fruit coloring to tint a pretty pink, flavor with either lemon or vanilla.

Salted Almonds—Shell, pour on boiling water, remove skins, put in pan, set in oven, stirring often till nicely browned. Take lump butter on knife, rub over almonds, sprinkle on salt, set in oven a few seconds, set out to cool. Peanuts are nice fixed the same way, only they need no hot water to remove skins.

To prepare this menu so there will be very little to be done Christmas day, the pudding should be made several weeks before needed and hung in a cool place, though it is good when just made. The sauce can be made the day before and set on back of stove, when needed slightly warm. Prepare the turkey two days before needed, salt, hang in cool place. The night before Christmas make the dressing and stuff ready to set in oven as soon as possible next day. Make salad dressing several days before needed. Boil the celery for the soup, strain off the broth and set away to be finished up next day. Prepare fruits and vegetables ready to peel and fix next day. Prepare nuts for the fruit salad the day before and it only takes a few moments to put it together. Set the table the night before, as it takes some time, and no one will object to eating breakfast on the kitchen table. No one should be a slave over the stove on Christmas day, but should get into the season of rejoicing and help to make others happy, and remember that it is our Savior's birthday and give to him some part of the day, not forgetting the lonely and homeless ones about us.—Jessie G. Storer, Beaumont.

JANUARY PRIZE CONTEST

The January prize contest will be for candy recipes. Send in your best. $2.00 will be the first prize, $1.00, the second, and all other recipes which are published will entitle their senders to a six months' subscription to the California Cultivator. When you send in your recipe, send also name of one of your family who is now receiving the paper so his or her subscription may be extended rather than having a second copy go to your address for the six months.

Write Early

Address all letters to California Cultivator, Los Angeles, and mail them so they will reach this office by the morning of Thursday, January 14. The articles will appear in the issue of January 21.

Photo Contest

The next photo contest closes Thursday morning, December 31, and prize winners will appear in the issue of January 7.

As before, $2.00 will be given for best and $1.00 for second best photo of country life on the Pacific coast and for all retained for future engraving, six months' subscription to the Cultivator.

December Prize Winners

First prize, Jessie G. Storer, Beaumont.

Second prize, Miss A. Butcher, Healdsburg.

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San Francisco-Los Angeles Produce Markets

Los Angeles Market

LOS ANGELES, Dec. 16, 1914.

The prices given below, except where otherwise noted, are those made by wholesale or commission houses to retailers, and are intended to give producers the range of the market rather than an indication of prices which they will secure. Jobbers' quotations to producers are not given.

BUTTER

No change has been made in the butter market. Receipts yesterday, 56,000 pounds.

Prices to trade 4 cents above following quotations:

Creamery Extras	.30
First	.28
Country	.23
Ladle	.22

CHEESE

Prices to trade, 1 and 2 cents higher:

California Fresh	.15@15½
Domestic Swiss	.20@21
Eastern Daisy	.18@18½
Longhorn	.18½@19
Imported Swiss	.36@38
Oregon Triplets	.17@17½

EGGS AND POULTRY

Upper grades of eggs declined one cent last week, but Northern and Petaluma showed a material increase.

Prices to trade, 3 cents higher than following quotations:

Fresh ranch, case counts	.38
Candled	.42
Northern Case Counts	.44
Petaluma-Santa Rosa	.45

Prices to producers:

Hens, lb.	.15@18
Roosters, old	.9
Broilers, lb.	.26
Fryers	.20
Roasters, lb.	.15
Turkeys	.18@20
Ducks	17
Geese	.16
Squabs, doz.	2.00

LIVE STOCK

The following quotations are f. o. b. Los Angeles on all stock:

Hogs, 175 to 200 lbs., per cwt.	$7.75
Prime Steers	.7¼@7½
Heifers	.6¼@6½
Calves, lb.	.8½@9
Sheep—	
Ewes, head	4.50
Wethers	4.50@5.00
Lambs, head	4.50@4.75

POTATOES

Wholesale selling price:

Idaho	1.30@1.35
Sweets, lug	.60@75
Northern Burbanks, cwt.	1.30@1.40
Salinas	1.75@1.85
Shimas	1.45@1.50
Lompocs	1.70@1.80

ONIONS

Australian Brown, cwt.	1.50@1.65
White Globe	4.50
Yellow Danvers	1.50@1.65
Garlic	.12@15

VEGETABLES

Wholesale selling price:

Artichokes, Northern, doz.	.80@1.00
Beets, doz.	.30@35
Beans, String	.11@12
Lima	.5@6
Cabbage	.65@75
Carrots, doz.	.30@35
Cauliflower, doz.	.50@60
Celery, crate, northern	2.25@2.50
Local	1.65@1.75
Cucumbers, hothouse	.65@1.25
Egg Plant	.4@6
Escarole, doz.	.40
Horseradish, lb.	.9@11
Leeks, doz.	.35@40
Lettuce, crate	.75@80
Mint, doz.	.35@40
Parsnips, doz.	.25@30
Okra, lb.	.9@10
Onions, Green, doz. bunches	.15@20
Oyster Plant	.30@35
Peas, lb.	.10@12
Peppers—	
Bell, lb.	.5@6
Chili, lb.	.4@5
Pimientoes	.6@7
Pumpkins, lb.	.1½@2
Radish, doz.	.20@30
Rhubarb, box	.75@80
Spinach, doz.	.20
Squash—	
Summer, lug	1.00@1.10
Chayote, lug	.65@75
Crookneck	.45@55
Hubbard, lb.	1¼@1½
Turnips	.30@35
Tomatoes, lug	.80@90

FRESH FRUIT

Wholesale selling price:

Apples—	
Bellflowers	.75@1.00
Jonathans	1.35@1.60
Spitzenbergs	1.35@1.75
Rome Beauty	1.25@1.35
Pearmains	.75@90
Bananas	.3½@4
Berries—	
Strawberries, basket	.6@11
Raspberries	.12@15
Blackberries	.13@15
Casabas, doz.	1.25
Cranberries, bbl.	7.75@9.00
Figs, box	1.75@2.00
Grapes	1.25@1.60
Guavas, basket	.5@7
Pears, Winter Nelis, lug	1.50
Persimmons, lb.	.4@8
Pineapples, lb.	.5½@6
Pomegranates, box	1.50@1.75
Quinces	.75@85

CITRUS FRUIT

Wholesale selling price:

Lemons	2.00@2.50
Grapefruit, Seedless	2.25
Navels	2.00@2.10
Tangerines	1.75
Limes, basket	.75@1.00

DRIED FRUITS

Wholesale prices to retailers are:

Evaporated Apples, Fancy, lb. boxes	.6¼@7½
Apricots	.8½@10
Nectarines	.12½
Peaches	.5½@6
Pears	.8@12
Prunes	.5¾@17
Plums	.10

NUTS

Prices named by California Walnut Growers' Association are:

No. 1	.16½
Budded Walnuts	.20
Jumbos	.19
No. 2	.12
Culls	.9

Prices fixed by California Almond Growers' Exchange, f. o. b. California.

Almonds—	
Nonpareil	.21
I X L	.20
N P U	.19
Drake's Thinshell	.15
Pecans	.15
Peanuts—	
California, Raw	.6
Japan	.7½
Eastern	.7½
Rice Corn	5.00@5.25

HONEY

Wholesale selling price:

Comb, Fancy, Water White	.14
White	.12
Light Amber	.11
Extr. Water White	.7
White	.6
Light Amber	.5½
Beeswax	.32

RICE

Wholesale selling price:

California	4.75@5.00
Broken	3.50@3.75

BEANS

Wholesale selling price:

Producer's price not far from one dollar under these quotations:

Limas	5.60@5.75
Lady Washington	5.15@5.25
Pinks	4.15@4.25
Black Eyes	4.90@5.25
Lentils	8.00@9.00
Navy	5.25@5.35
Small White	4.80@4.90
Garbanzos	6.00@7.50

HAY

Buying prices f. o. b. cars Los Angeles:

Barley	10.00@11.00
Wheat Hay	10.00@11.00
Tame Oat	11.00@13.00
Alfalfa	9.00@11.00

GRAIN

Wholesale selling prices f. o. b. Los Angeles:

Corn, Yellow	2.00
Corn, White	2.10
Wheat	2.20@2.25
Oats, Red	2.25@2.50
Oats, White	1.85
Kaffir Corn	1.75
Millet	3.75
Popcorn	4.75@5.00
Egyptian Corn	1.85
Barley Seed	1.50
Milo Maize	1.75
Cal. Seed Oats	2.25
Sunflower Seed	6.50

FEED STUFF

Wholesale selling prices f. o. b. Los Angeles:

Bran, Heavy	1.55
Alfalfa Meal	1.00
Alfalfa Molasses, per cwt.	1.15
Beef Scraps	3.00
Beet Pulp	1.20
Cracked Corn, cwt.	2.00
Cracked Wheat, cwt.	2.35
Cotton Seed Meal	1.70
Bloodmeal	3.60
Bone Meal	1.95
Meat Meal	3.00
Bone, Green	1.85
Charcoal	1.90
Oil Cake Meal	2.00
Fish Meal	3.15@3.25
Rolled Oats	1.90
Rolled Barley	1.40
Middlings	1.85
Feed Meal	2.05
Oat and Wheat Middlings	1.60

San Francisco Market

SAN FRANCISCO, Dec. 15, 1914.

The prices given below, except where otherwise noted, are those made by wholesale or commission houses to retailers, and are intended to give producers the range of the market rather than an indication of prices which they will secure. Jobbers' quotations to producers are not given.

BUTTER

A decline of 2 cents has been made on extras since last week's quotations, and the demand is rather weak at that price. Trade on lower grades is rather better.

Prices to trade, 4 cents above following quotations:

Extras	.29
Prime Firsts	.28
Firsts	.26
Seconds	.24

CHEESE

Wholesaler to retailer.

Oregon Y. Am.	.16
Young America	.13@14
California Flats	.10@13½
Cheddar	.20
Oregon Twins	.14½

EGGS AND POULTRY

A decided advance was made on eggs during the week.

Prices to trade 3 cents higher than following quotations:

Extras	.44
Select Pullets	.39
Storage Extras	.29½

Price to producer:

Hens, lb.	.15@17
Eastern	16@19
Fryers	.18@19
Roosters, old	.11
Roosters, young	.16@17
Broilers	.18@20
Ducks	4.50@7.00
Geese, pr.	2.00@3.00
Squabs	2.50@3.50
Belgian Hares, lb.	.9@10
Turkeys, live	.16@19
Dressed	.20@22

LIVE STOCK

San Francisco prices, gross weight:

Steers	.4@7¼
Cows and Heifers	.3@6¼
Calves, lb., live weight	.6@9½
Hogs	.5@7½
Wethers	.6@6½
Ewes	.5¼@5¾
Milk Lambs	.7@7½

POTATOES

Wholesale selling price:

Delta Burbanks	.85@1.10
Salinas Burbanks	1.35@1.50
Oregons	1.20@1.40
Idaho	1.00@1.15
Sweets, cwt.	1.35@1.50

ONIONS

Wholesale selling price:

Oregon, Yellow	.85@1.10
Bermudas, crate	.90@1.25
Garlic, new	.10@12

VEGETABLES

Wholesale selling price:

Beans—	
Wax	.3@8
Strings	.3@8
Limas	.5@8
Brussels Sprouts, lb.	.4@4½
Cabbage, cwt.	1.00@1.25
Carrots, sack	.30@40
Celery, doz.	.10@20
Cucumbers, lug	1.25@1.50
Egg Plant, lb.	.3½@4
Lettuce, crate	.65@1.35
Peppers—	
Bell, lb.	.3@4
Chili, lb.	.3@4
Squash, sack	.40@50
Summer, crate	.75@1.00
Tomatoes	.40@85

FRESH FRUIT

Apples—	
Newtown Pippins	.50@85
Bananas, Hawaiian, bunch	1.25@1.7
Cranberries, bbl.	8.50@10.00
Grapes lug	.80@1.00
Huckleberries	.5@7
Pears, Winter Nelis, wrapped, box	1.25@1.50
Pomegranates, box	.50@1.00
Pineapples	2.75@3.25
Persimmons	.50@1.00
Quinces, box	.25@40
Strawberries, chest	3.50@5.00

CITRUS FRUIT

Wholesale selling price:

Grapefruit, Seedless, new crop	1.75@2.50
Lemons	1.75@4.00
Lemonettes	.75@1.25
Limes, case	3.00@5.00
Navels	1.75@2.25
Tangerines, halves	2.00@2.25

DRIED FRUITS

Wholesale prices are:

PRUNES—1914 crop, bulk basis: 30-40s, 7c; 40-50s, 6c; 50-60s, 6c; 60-70s, 6c; 70-80s, 6c; 80-90s, 6c; 90-100s, 5¾c. 1913 crop worth practically same prices. The above are for both Santa Clara prunes and stock from outside sections.

Other Fruits, 50-lb. boxes—	Standard	Ch.	Extra Ch.	Fcy.
Evaporated apples.	...	4¾	5	5¾
Apricots	7½	8½	9	10½
Peaches	3¾	4	4¼	5½
Pears	7	8	9	10

RAISINS

RAISINS—The following prices are f. o. b. Fresno, as given out by the Associated Raisin Company for immediate shipment and are guaranteed against a decline till December 31st: Fancy seeded, 16-oz., 7c; 12-oz., 5¾c; bulk, 6c; choice seeded, 16-oz., 6¾c; 12-oz., 5½c; Thompson seedless, No. 1, 16-oz. pkgs., 7⅜c; 12-oz., 6c; 50-lb. cases, 6¼c; loose Muscatels, 1-crown, 5½c; 2-crown, 5½c; 3-crown, 5¾c; 4-crown, 6c; Sultanas, 50-lb. cases, 5½c; bulk, layers, 50-lb. bxs., $2.75; in 20-lb. bxs., 6-crown, $2.75; 5-crown, $2.25; 4-crown, $1.60; 3-crown, 5-lb. bxs., on all bulk stock, 50c additional; 10-lb. bxs., 25c additional. Cartons—Clusters, 20 to a case, No. 1, $1.70; No. 2, $2.10; No. 5, 4 to a case, $2.25. Local representatives of the association are asking about ¼c higher, while several of the largest packers are quoting ½c under these figures.

NUTS

ALMONDS—Prices fixed by Almond Growers' Exchange to the trade, f. o. b. California:

Nonpareil	.21
I X L	.20
Ne Plus Ultra	.19
Drakes	.18

Wholesale selling price:

Peanuts—	
Unpolished	.5@
Polished	.6@6½
Japanese, Shelled	.6¼@6¾
Italian Chestnuts	.6½@7

BEANS

Wholesale selling price:

Limas	5.40@5.5
Lady Washington	3.60@3.7
Pink	3.50@3.6
Black Eyes	4.10@4.3
Cranberry	4.30@4.5
Small White	4.50@4.60
Garbanzos	5.75@6.00
Large White	4.30@4.40
Bayou	5.25@5.3
Manchurian Speckled Bayous	3.50@3.7
Manchurian Butters	3.90@4.1
Manchurian Cranberry	4.15@4.25
Red Mexican	.545@5.55
Red Kidney	5.50@5.75
Horse Beans	3.00@4.00
Bayou	5.35@5.50

HONEY

Comb, Water White	.14@1
Amber	.10@1
Dark	.7@1
Extracted White	.7@
Light Amber	.6½
Dark	.4@5½
Beeswax	.27@3

HOPS

1914

Sacramento Valley	.7@9½
Sonoma-Mendecino	.9½@11½
Oregon Clusters	.9½@11½

HAY

Under date of Dec. 12, Scott, Magner & Miller say:

Receipts of hay for the past week were 1736 tons, just about the same as the previous week, which were 1649 tons. The rains have come at the best possible time, as a great deal of the plowing and seeding has already been done, and now, with a few weeks of dry weather, everything will be seeded and the prospects for large crops at this time are good.

Receipts have consisted of the poorer and medium grades with a very few cars of first-class hay. The latter have sold to advantage. There is no change to note in the alfalfa market. Straw remains the same.

We quote the average wholesale prices on carload lots on today's market as follows:

Fancy Wheat Hay, lt. bales	11.00@12.0
No. 1 Wheat or Wheat and Oat	9.00@10.5
No. 2 Wheat or Wheat and Oat	6.00@8.5
Choice Tame Oat	10.50@12.0
Other Tame Oat	6.00@9.0
Barley	5.00@8.5
Wild Oat	6.00@8.0
Alfalfa	6.00@9.0
Stock Hay	4.50@5.0

◆◆◆

WEATHER CONDITIONS

For Week Ending December 12, 1914

Report from the various stations of the U. S. Weather Bureau, by Geo. H. Wilson, director, San Francisco:

	Rainfall Data			Temperature Data	
	Past Week.	Seasonal to Date.	Normal to Date.	Maximum.	Minimum.
Eureka	4.34	14.68	12.43	52	38
Red Bluff	3.01	7.28	7.18	50	32
Sacramento	.90	2.92	4.80	54	32
San Francisco	1.87	4.22	5.34	56	44
San Jose	1.32	4.10	4.02	58	34
Fresno	.62	1.59	2.52	60	34
Independence	.12	.52	2.44	46	16
San Luis Obispo	1.82	3.85	4.24	60	36
Los Angeles	.84	2.15	3.03	64	44
San Diego	.59	3.07	1.80	64	46

T means trace.

Straw	30@45

GRAIN	
Alfalfa Seed	14@16
Wheat, Cal. Club	2.00@2.05
Corn, Eastern Yellow, blk	1.55@1.57¼
Corn, Egyptian White	1.55@1.57½
Barley, Feed	1.17½@1.25
Shipping and Brewing	1.26¾@1.27½
Oats, White	1.57½@1.60
Oats, Red, Seed	1.55@1.65
Oats, Red, Feed	1.50@1.60
Millet	3@3¼
Flax	6@6½
Rye	1.50@1.60
Sunflower	5@5½

FEED STUFF	
Alfalfa Meal, car lots	14.00@14.50
Bran, ton	27.50@28.00
Feed Cornmeal, ton	38.00@38.50
Cracked Corn	38.00@38.50
Rolled Barley, ton	26.00@26.50
Rolled Oats, ton	37.00@37.50
Middlings	31.00@32.00
Shorts	28.00@29.00
Oilcake Meal	36.00@37.50
Cocoanut Oilcake Meal	23.00@24.00

Citrus Fruit Market

LOS ANGELES, Dec. 16, 1914.

The most satisfactory thing connected with the orange market at present is the keen demand for Californias and the premium they are commanding over any other fruit in the market. They are keeping better than oranges from any other section and commanding practically a dollar more per box. The most unfortunate feature of the market is the extreme cold just at a time when demand is great to supply holiday trade.

The strongest comment we have heard on the lemon market was by one handler of lemons, who said that it was very satisfactory in one respect, "It can't get any worse. If there is any change it must be for the better." Importations are 40 per cent greater than any preceding year, and while prices of the imported stuff are running exceedingly low, the importers are in high glee at being able to create conditions so discouraging to American production.

Shipments

Shipments of oranges from Southern California to date since November 1: 701 cars; lemons, 412; total, 1113. To same date last season: Oranges, 590; lemons, 146; total, 736. From Tulare County this season: Oranges, 3053; lemons, 74; total, 3127. Last season: Oranges, 3282; lemons, 11; total, 3293. From Butte County: Oranges, 307; last season, 260.

NEW YORK, Dec. 14.—Seventeen cars navels, one Arizona navels and three cars California lemons sold. Market easier on California navels; Arizona navels lower. Lemons steady. Weather fair.

NAVELS—	Avge.
Niagara, Stewart, Ft. Co	$2.40
Signal, Stewart Ft. Co.	2.45
Niagara, Stewart Ft. Co.	2.00
Heart, Merryman F. L. & L. Co.	2.60
Heart, Merryman	2.55
Washington, Merryman	2.40
A1, Imp., Amer. Ft. Dis.	2.55
Jupiter, Imp., Amer. Ft. Dis.	2.30
Earliest, C. C. Lemoncove	3.05
Kaweah Chief, C. C. Lemoncove	2.95
Lans Egal, C. C. Lindsay	2.75
Mt. Whitney, T. C. Success	2.85
ARIZONA NAVELS—	
Cactus Brand	$2.45
ARIZONA NAVELS—HALVES—	
Desert	$1.80
Tonto	1.35
Cactus	1.10
CALIFORNIA LEMONS—	
Pet	$2.55
Trail	2.50
Whittier	2.50
Pico	2.40

BOSTON, Dec. 14.—Ten cars oranges three cars lemons sold. Clear and cool. Market is very strong, doing better on small sizes navels, unchanged on lemons.

NAVELS—	Avge.
Strathmore, T. C. Strathmore	$2.60
Naranjo, T. C. Naranjo	2.55
Egnaro, C. C. Lindsay	2.50
Egnaro, C. C. Lindsay	2.85
Earliest C. C. Lemoncove	3.30
Keweah Chief, C. C. Lemoncove	3.15
LEMONS—	
Lemoncove, C. C. Lemoncove	$2.45
Gateway	1.90
Quail, O. K. Ex.	2.75
Coyote	2.05
Independent Fv., Growers Ft. Co.	2.60
Choice	2.20

PITTSBURGH, Dec. 14.—Four cars navels, one car lemons sold. Fourteen cars Floridas sold, averaged $1.50. Stormy.

NAVELS—	Avge.
Blue Label, C. C. Lindsay	$2.50
Red Label, C. C. Lindsay	2.05
Happy Boy, C. C. Lindsay	1.75
Strathmore, T. C. Strathmore	2.50
Scotch Lassie Jean, T. C. Strath.	2.25
LEMONS—	
Pico, S. T. Whittier	$2.30
La Puente	1.70

CLEVELAND, Dec. 14.—Four cars navels sold. Market advancing on good color, steady fair-colored navels. Colder—zero tonight. Eight cars Florida oranges sold, averaging $1.50 per box.

NAVELS—	Avge.
St. Francis, C. C. Lindsay	$2.65
Kaweah Chief, C. C. L. Cove	2.95
Basket, C. C. Lemoncove	2.70
Niagara, Stewart Ft. Co.	2.10
LEMONS—	
Basket C. C. Lemoncove	$2.00

CINCINNATI, Dec. 14.—Colder. Prices low on lemons account condition. Market weak on small sizes navels, advancing on Floridas. Sold two cars lemons, one car navels, 12 cars Florida oranges, three cars grapefruit. Florida oranges sold $1.00 to $2.15, average $1.50; grapefruit, $1.25 to $2.25, average $1.65.

NAVELS—	Avge.
St. Francis, C. C. L.	$2.65
Dolores, C. C. L.	2.30
LEMONS—	
Maduro, C. C. Corona	$1.35
Grove	.85
Arab, S. D. San Dimas	2.30
Greyhound	1.80
Pup	1.25

ST. LOUIS, Dec. 14.—Clear. Five degrees above zero. Market weak account weather. Three cars navels, one car lemons sold. Twenty-two cars Floridas sold from $1.00 to $1.85; three cars Floridas withdrawn.

NAVELS—	Avge.
Basket, C. C. Lemoncove	$2.20
Golden Orchard, Ind. Ft. Co.	2.20
La Loma	1.80

PHILADELPHIA, Dec. 14.—Three cars navels, one car lemons sold. Thirty-five cars Floridas selling today.

NAVELS—	Avge.
Mt. Whitney, T. C. Success	$2.00
Heart, Merryman F. L. & L. Co.	2.45
Washington, T. J. Dofflemeyer	2.00
LEMONS—	
Golden Bow, V. C. Kevitt	$2.60
Silver Cord	2.15
Lemoncove, C. C. Ex. L. Cove	2.30

CHICAGO, Dec. 14.—Apples, barrel, 1.75@4.00; apples, boxes, 1.25@2.25. Cranberries, barrel, 4.00@7.50. Grapes, baskets, 5@10. Lemons, boxes, 3.00@3.75. Pineapples, cases, 2.00@3.75. Oranges, boxes, 1.50@3.00. Pears, barrels, 1.50@2.75. Strawberries, 10@20 per pint.

GUARDING THE SUGAR BEET CROP

Leaf-spot, one of the most serious and widely distributed diseases of the sugar beet, can be controlled by a careful system of crop rotation and by deep fall plowing, according to recent investigations conducted by the United States department of agriculture. By reducing both the tonnage and the sugar content of the beet the leaf-spot disease is a serious menace to the profits of beet growers. In addition, the disease lessens to a very appreciable extent the feeding value of the beet tops. Sugar beets are, of course, grown primarily for the money value of the roots, but the tops are also very important as stock feed. A bad visitation of leaf-spot disease will reduce the feeding value of the tops at least 50 per cent. What this might amount to is indicated by the fact that if the disease caused an average loss of 10 per cent in the value of the crop of beet tops, the loss to the country would amount to over $300,000 a year in this one item alone. The loss in sugar would, of course, be far greater.

To control the disease the government investigators advocate first of all a proper system of crop rotation. This indeed is essential to good farming whether leaf-spot disease exists or not, but the fact that it is extremely valuable in fighting the disease is still another reason why it should receive the greatest attention from farmers. Certain pests like the fungus of the leaf-spot disease can thrive only on certain kinds of plants. When their food supply is cut off by the planting of other crops, the pests must inevitably suffer. The fungus which causes leaf-spot disease cannot, as far as scientists have been able to discover, thrive upon small grains, corn, clover, alfalfa, cowpeas, beans, and many other plants which are in other respects suitable for a rotation with sugar beets. Their use therefore will not only improve the land but go far toward eliminating the pest. In one locality, for example, a system of crop rotation is employed in which beets seldom follow beets, and here the leaf-spot disease has been stamped out to such an extent that it is no longer feared.

Where the disease has already obtained a firm footing it is recommended that as much as two years intervene between beet crops. The best results probably occur when three or even four years of other crops are provided for in the rotation. No hard and fast rotation system is laid down in the bulletin which discusses this question and which has just been published under the title of "Farmers' Bulletin 618, Leaf-Spot, A Disease of the Sugar Beet," for the authors say that the most profitable system must be worked out for each individual farm.

Deep fall plowing is another means of controlling leaf-spot. This is valuable chiefly when it is absolutely necessary to follow in infested land one crop of beets with another. Such cases occasionally arise and it will then be found that by plowing to a depth of 14 inches or so the amount of the disease in the second crop can be materially reduced. To suppose, however, that deep fall plowing will take the place of a carefully planned rotation system would be a fatal mistake.

Still a third method of controlling the disease is spraying. It has been demonstrated repeatedly that leaf-spot may be controlled almost perfectly by the proper use of Bordeaux mixture. It is a question, however, whether the remedy in some cases is not more expensive than the disease. Local conditions must determine the answer. Government investigations indicate that for effective spraying at least $9.50 must be allowed an acre. Assuming that there is a flat rate of $5 a ton for beets, the spraying must produce an increased yield of two tons in order to be profitable. As in the case of all work of this kind, moreover, the spraying must be thoroughly done to be effective. When beets are grown on a commercial basis, therefore, it is probable that the simplest and most inexpensive method of fighting leaf-spot disease is the establishment of a rotation that will not necessitate growing a crop two years in sucession in the same field; and if circumstances make this unavoidable, deep fall plowing is a most desirable precaution.

A careful farmer can also do much in the way of preventive measures. Many things contribute to the spread of the disease, such as wind, water, insects, and the passage of men and animals from diseased fields to those not yet infected. The wind, the water, and the insects are largely beyond the control of the grower, but he can in great measure at least see that neither men nor animals pass directly from an infected beet field into land that is to be used for beets the following year.

Farmers' Bulletin No. 618, "Leaf-Spot, A Disease of the Sugar Beet," will be sent free on application as long as the department's supply lasts.

CONCRETE HOT-BEDS

(Continued from Page 621)

85 or 90 degrees, planting may be safely done. Seed catalogues contain valuable information as to the length of time necessary to produce the different kinds of plants.

During the mid-day, in bright weather, the bed will become too hot and must be ventilated for a short period by raising the sash on the side away from the wind. Water the plants in the morning only and ventilate later to remove the moisture from the foliage. On winter nights it will often be necessary to cover the bed with old carpets and boards.

BEAUTIFUL CATALOG

The 1915 catalog of the Armstrong Nurseries at Ontario rather outshines all previous catalogs issued by this nursery and that is saying much for the Armstrong catalog of nursery stock has been one of the very finest issued in California, and when we say this we say practically everything that can be said for we have seen catalogs of many eastern nurseries but never have we seen any that come up to those issued by California nurserymen. Mr. Armstrong's latest catalog has 64 pages with a beautiful embossed cover. In addition to the instructive text there are hundreds of illustrations of plants, fruits and flowers. The fund of information which it contains makes it a very valuable book to add to any library. There is more of real information in it than in some books on fruit culture. No price is named so we assume a request is all that is necessary to secure it.

A NEW STORY BY KIPLING

"Swept and Garnished" is the title of the story by Rudyard Kipling which leads the fiction of the January Century. Estelle Loomis has written her impressions and emotions of "That Day in Paris." "That magic, historical Saturday, that first day of August, 1914, when I saw Paris change from its bright, high beauty—change in a single hour—to the wreck and frenzy of a cubist picture, distraught, distracted, by the ruinous threat of war." The illustrations of the January Century include pages in color by Arthur Rackham, Anna Whelan Betts ("Coming Home for Christmas"), Everett Shinn, and Frederick Dorr Steele; and four drawings by Joseph Pennell, picturing "In the Path of War."

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The Farmer's Guide Huntington, Ind. Established 1889.	80,000 Weekly
The Nebraska Farmer Lincoln, Neb. Established 1859.	50,000 Weekly
Farm and Ranch Dallas, Tex. Established 1882.	90,000 Weekly
Field and Farm Denver, Colo. Established 1872.	30,000 Weekly
California Cultivator Los Angeles, Cal. (Rural California merged July 1. '14) Established 1877.	21,000 Weekly
The Washington Farmer (Formerly The Ranch) Seattle, Wash. Established 1881.	20,000 Semi-Mo.
The Oregon Farmer (Formerly Oregon Agriculturist) Portland, Oregon. Established 1891.	15,000 Semi-Mo.
The Idaho Farmer Boise, Idaho.	10,000 Monthly
Farm Engineering Springfield, Ohio. Established 1913.	75,000 Monthly

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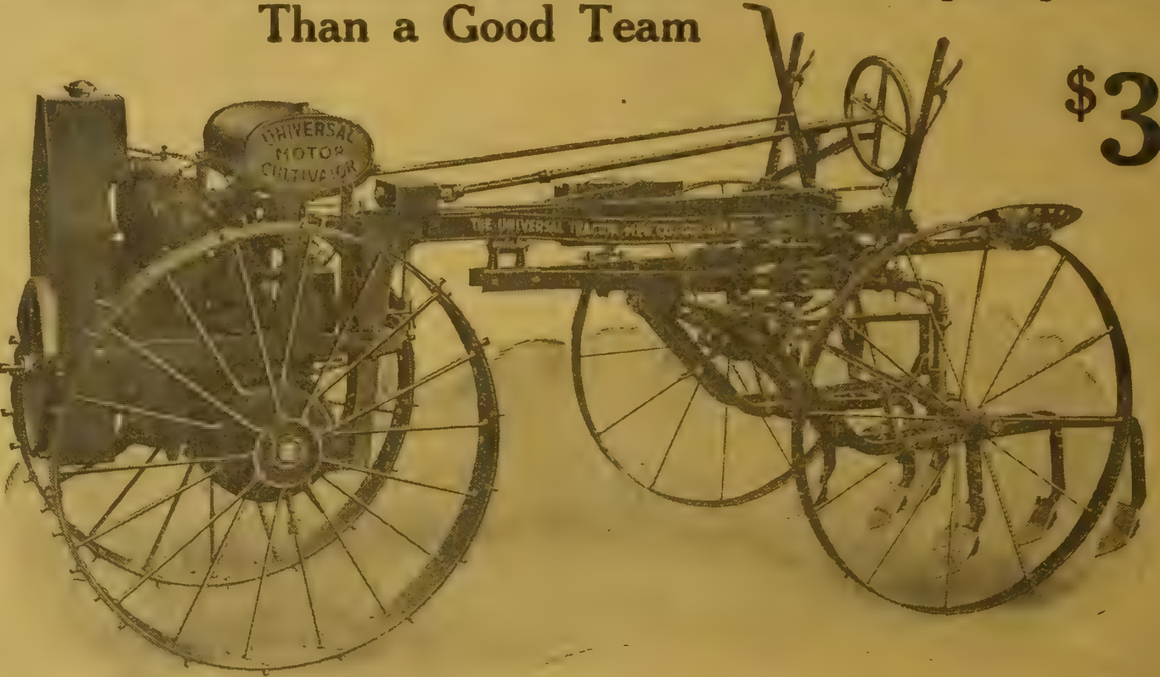

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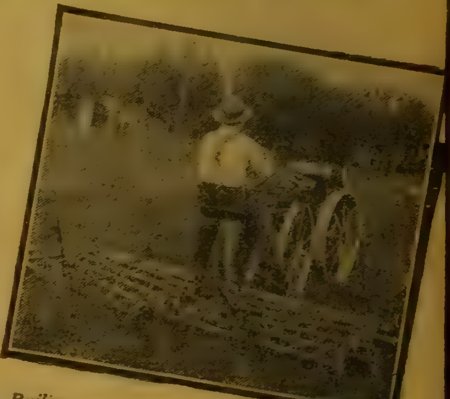

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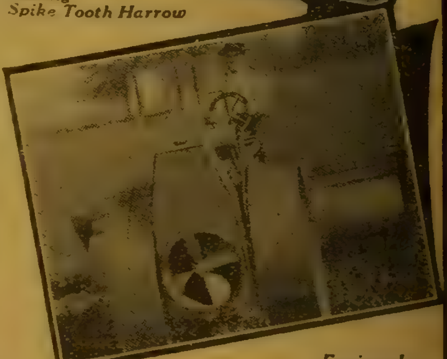

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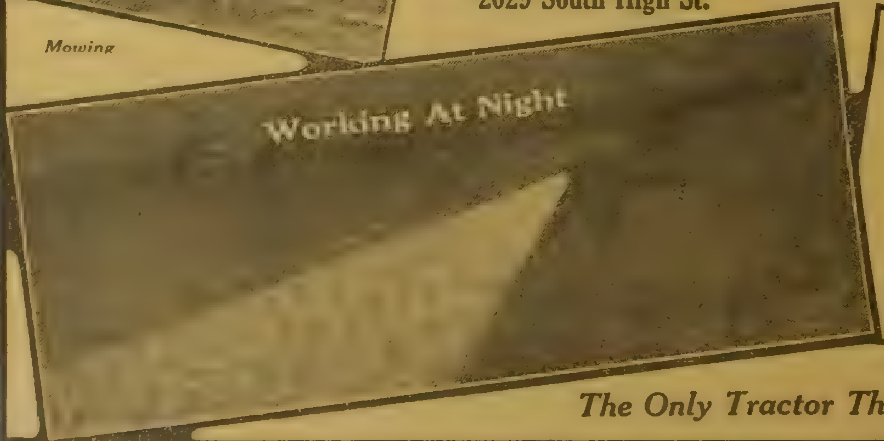

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An Illustrated Weekly Magazine, Devoted to the Rural Home and Ranch

LOS ANGELES December 24, 1914 SAN FRANCISCO

Orange Picking Season in California

This state has never shipped finer fruit than is going forward this year, and from present indications we will ship a great crop. California ships more carloads of oranges than of any other fruit.

Books

This list of helpful, instructive and interesting books is prepared by us with the purpose of enabling the Cultivator readers to supply themselves at the lowest possible cost. The great value of many of these is so well known as to need no comment from us. Some of the new books which we have added to the list this year deserve special mention. "Co-Operation in Agriculture," by G. Harold Powell, should be in the hands of every producer of farm products. "Farm Sewage," by Santee, will aid many in solving a perplexing problem. "Farm Manures," by Thorne, is decidedly valuable. We state sincerely that no orchardist can afford to get along without "The Pruning Book," by Bailey. We have had much inquiry for a book on keeping farm accounts—we can supply a good one now. The imported book, "Insecticides, Fungicides and Weedkillers," by Bourcart, is a marvel of completeness. The rapidly increasing use of gasoline engines, automobiles and tractors by the farmers has demanded reliable treatises on these subjects. "The Gasoline Engine on the Farm," by Putnam, "The Modern Gasoline Automobile," by Page, and "Traction Farming and Traction Engineering" are exceptionally complete, well illustrated and easily understood. Don't overlook the "Cement Workers' Handbook"—it's "worth its weight in gold." Every book on this list has the endorsement of the California Cultivator.

	Book Alone.	With Cultivator.	Free for the following number of new Subscribers.
American Grape Growing, by Hussman	$ 1.50	$ 2.25	3
Arid Agriculture, by Buffum	1.50	2.35	3
Book of Alfalfa, by Coburn	2.00	2.75	4
California Soils, by Prof. Gilbert E. Bailey	1.50	2.20	3
Cyclopedia of Agriculture, by Bailey	20.00	20.00	40
Cement Worker's Handbook	.50	1.30	1
Citrus Fruits and Their Culture, by Hume	2.50	3.25	5
Co-operation in Agriculture, by Powell	1.50	2.40	3
Domestic Water Supplies on the Farm, Fuller	1.50	2.30	3
Date Growing, by Popenoe	2.16	2.85	4
Feeds and Feeding, by Henry	2.25	3.00	5
Farm and Garden Rule Book, by Bailey	2.17	2.90	4
Farm Sewage, by Santee	.50	1.40	1
Field Manual for Beet Sugar Growers, Adams	1.00	1.85	2
Fruit Growing in Arid Regions, by Paddock	1.50	2.40	3
Farm Manures, by Thorne	1.50	2.25	3
Farm Friends and Farm Foes	.90	1.85	2
Farmers of Forty Centuries, by King	2.15	2.95	4
Fertilizers, Source, Purchase and Use (Smith)	1.00	1.90	2
Garden Helps, by Hall	.75	1.65	2
Gasoline Engine on the Farm, by Putnam	2.00	2.60	4
Garden Book of California (Ornamental) by Angier	2.00	2.85	4
How to Keep Farm Accounts	1.00	1.75	2
Hand Book for Farmers and Dairymen, by Woll	1.50	2.30	3
Irrigation and Drainage, by King	1.50	2.40	3
Insecticides, Fungicides and Weed-killers	4.50	4.75	9
Modern Gasoline Automobile, by Page	2.50	3.10	5
Milk and Its Products, by Wing	1.50	2.40	3
Making the Farm Pay, by Bowsfield	1.15	1.95	2
Nursery Book, by Bailey	1.50	2.40	3
Practical Garden Book, by Bailey and Hunn	1.00	1.90	2
Primer of Irrigation, by Anderson (paper cover)	1.00	1.85	2
Pruning Book, by Bailey	1.50	2.40	3
Story of the Soil, by Hopkins	1.50	2.35	3
Soils, by Hilgard	4.00	4.75	8
Swine in America, by Coburn	2.50	3.25	5
Traction Farming and Traction Engineering	1.65	2.25	3
Science and Practice of Cheese Making	1.75	2.50	4
Soil Fertility and Permanent Agriculture, Hopkins	2.70	3.50	6
POULTRY, ETC.			
Built and Used by Poultrymen (excellent)	.50	1.25	1
Belgian Hare Guide	.25	1.20	1
Ducks and Geese	.75	1.65	2
Leghorns, All Varieties	1.00	1.85	2
Minorcas—Every Comb and Color	.50	1.45	1
Practical Rabbit Keeping	1.25	2.10	2
Perfected Poultry of America	2.50	3.00	5
Poultry Houses and Fixtures	.50	1.40	1
Pigeons—All About Them	1.00	1.90	2
Reliable Poultry Remedies	.25	1.20	1
Rhode Island Reds	.75	1.65	2
Turkeys	.75	1.65	2
Western Poultry Book, by Mrs. Basley	1.00	1.75	2
BEES			
A B C and X Y Z of Bee Culture	$ 1.50	$ 2.35	3
Beekeeper's Guide, by Prof. Cook	1.20	2.00	3

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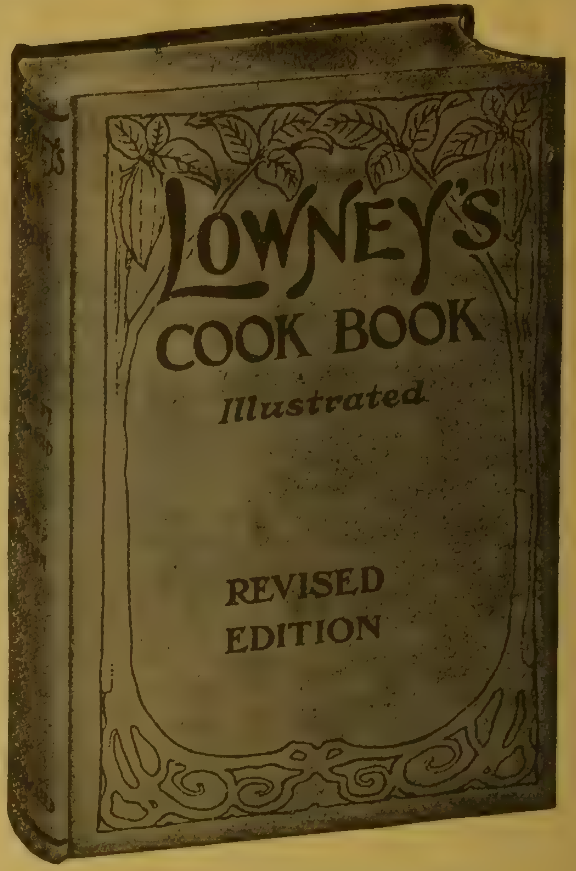

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covers the bill-of-fare from relishes to after-dinner coffee. There are 65 different salads; 15 salad dressings; 73 soups; 50 recipes for vegetables; 91 entrees, from Aspic Jelly to Chicken Supreme; 51 sauces for meats and vegetables; 41 rules for the chafing dish. There are over 400 desserts; 84 cake recipes, not counting the fillings and frostings; over 60 recipes for invalid cookery, besides recipes for fish, meats, hot and cold desserts, bread, cake, beverages, etc.

The recipes are the latest word in scientific cooking, refined, wholesome and appetizing. There are chapters on the properties of foods; on how to market; on the theory of baking and boiling, etc., on the butler's duties and how dinners and lunches, formal and informal, should be arranged, set and served; and the woman who does her own cooking will find hundreds of simple, practical, economical dishes, which will be worth many times to her the cost of the book.

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The Cooking Department and the Fashion Department combine luxury with economy, and are under the supervision of well-known experts. The Fancywork and Home Decoration Departments are of especially high standard, and the pages on Entertainment contain valuable and novel suggestions.

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Rural Californian combined with California Cultivator

Vol. XLIII No. 26 LOS ANGELES: THURSDAY, DECEMBER 24, 1914 One Dollar Yearly

Citrus Fruits in Japan

Carl Nichols, Who Has Secured a Fund of Information Regarding Citrus Culture in Other Countries, Has Gathered for Cultivator Readers Items of Interest as to the Extent of the Citrus Industry in Japan and the More Common Varieties Grown in That Country and Also Gives Some Points on Cultural Practice in the Orient

THE following information on citrus fruits and their culture in Japan has been obtained in part by correspondence with the American consuls at Yokahama, Kobe and Nagasaki and in part from a small book entitled "The Fruit Culture in Japan," by Tomochika Ikeda, a noted Japanese scientist and horticulturist.

Geography of Japan

Passing from the northernmost point of the Japanese isles southward to the Island of Formosa, one covers 28 degrees of latitude, or a distance of 2500 miles. Mountain chains running in a general north and south direction divide the empire lengthwise into two main divisions, that to the west or north being known as "Ura Nippon," that to the east or south, "Omote Nippon."

Climate

Ura Nippon is characterized in winter by cold north or northwest winds accompanied by snowstorms. But the cold winds from the frozen continent of Asia become much drier in passing to the opposite side of the mountain ranges. Thus in the regions of Omote Nippon rain and snow are small in amount in winter. In summer conditions are just reversed. Then we have south or southeast winds from the Pacific sweeping over the islands toward Asia. These winds are laden with moisture and much of this is discharged on striking the mountains of the Pacific belt, leaving the regions of Ura Nippon with almost rainless summers.

Citrus Growing Regions

Due to the warm ocean currents the northern limit of citrus culture is at about 37 degrees N. L. on the Pacific Coast. Near this northern limit we find growing the hardy trifoliate orange and the bitter orange known as Daidai. Farther south come the mandarins, the kinkans or kumquats and the Natsumikan (C. bigaradia var. sinense). Next come the regions where the sweet orange varieties may grow, their northern limit being about 35.5 degrees N. L. on the seacoast. Still farther south are found the pomelos, and farthest south of all are the Fingered citrons, the citron of commerce, and lemons.

The principal citrus centers are located in the northwestern part of the province of Kii, in Izumi, and in the prefectures of Wakayama, Shizuoka, Kanagawa and Yamaguchi.

Location of Groves

In the prefecture of Osaka the orange groves are situated about three miles distant from the sea and at an elevation of 2016 feet. In the province of Kii they are located from one-half to three miles from the sea at an elevation of 610 to 800 feet. The trees are often planted on steep hills in terraces, the terraces being supported by stone walls. A southerly exposure is considered best for the trees, and the best soil is a sandy loam underlaid by gravel at about three feet. The citrus fruits of Omoto Nippon are said to be much superior to those of Ura Nippon.

Effect of Latitude and Climate

As one goes southward in Japan the flavor of oranges, pomelos and mandarins becomes improved because of the greater and greater sugar content. Moreover the color deepens and the rinds become smoother and thinner. But far south in the Riukiu Isles and Formosa the acid is almost wholly replaced by sugar. Consequently the sprightly acid character of the fruit is almost lost and the quality is impaired.

CALIFORNIA-GROWN ORANGE TREE GROWN ON THE PLACE OF W. M. BRISTOL, HIGHLANDS, ON HEAVY SOIL WHICH HAS BEEN TREATED WITH SAND TO MAKE SOIL CONDITIONS MORE ACCEPTABLE TO THE FINE ROOTS OF THE ORANGE.

Extent of Citrus Industry

The only figures which I have found on the acreage of citrus groves in Japan are for the year 1903. In that year there was a total of 25,412 acres of which 14,402 acres was planted to mandarins. In 1911 there were in Japan a total of 20,145,000 citrus trees. Of these, 13,000,000 were mandarins and 1,000,000 navels.

The production of citrus fruits in 1911 amounted to 476,643,000 pounds, of which 308,798,000 pounds were mandarins and 10,611,000 pounds navels.

The exports of mandarin oranges from Japan are assuming considerable proportions. The figures for 1912 are as follows: To China, 1,578,406 pounds, $29,295; to Manchuria, 14,576,156 pounds, $251,237; to Siberia, 11,206,916 pounds, $213,250; to United States, 1,194,851 pounds, $21,526; to Canada, 3,200,916 pounds, $62,740. Total, 31,770,132 pounds, $578,351.

Common Citrus Varieties

Of the many varieties of oranges grown in Japan, the Oonshiu or Satsuma, the Hira-mikan, the Koji, the Kinkan or Kumquat and the Natsu-Mikan are the most profitable. Of the common sweet oranges, the Washington navel and Thompson's Improved navel are planted on a rather large scale.

The most popular variety of orange is the Oonshiu or Satsuma which belongs to the mandarin group. The trees grow to a height of 10 or 12 feet and cover a space of 22 feet or more in diameter. The branches put forth close to the ground, and not being pruned, the weight of the fruit causes them to lie on the ground, completely covering the trunk. The trees are extremely prolific. The fruit, which averages about 2½ inches in diameter, is picked when green and sour, even as early as the first of October. They are all off the trees by December and many are stored, being found in the market as late as the end of May. The Oonshiu orange is almost seedless, usually only about one per cent of the fruits containing seeds. The fruit is flattened, the rind peels easily and the segments part readily. The flavor is pleasant and much liked by foreigners in Japan and China.

The Hira Mikan (Kishiu Mikan, or Kino Kuni Mikan) is a somewhat smaller fruit than the Oonshiu, and though containing a few seeds, it is a very good fruit. The tree grows to a height of 30 feet, is an immense bearer and is as hardy as the Oonshiu. The Kinkan or Kumquat, known in China as the Cungnot or Golden orange, grows to a height of 16 feet and is very prolific. There are two varieties, the Marumi (round fruit) and the Nagami (long fruit. The fruit are small, containing four or five seeds, and may be eaten raw, rind and all. Their chief use, however, is for the making of preserves or for crystalized fruit. Thus treated they have long been popular in Japan and China.

Propagation of Citrus Trees

The common method of propagating citrus trees in Japan has been by grafting. Until the last few years budding has been almost unknown, but it is now beginning to be popular. The two stocks most commonly used are the Trifoliata, or native deciduous wild orange, and the Yuzu (C. medica var. acida). The former has a dwarfing effect on the graft, while the latter does not. The trifoliate orange grows to a height of 20 or 25 feet, the fruit is perfectly round, similar to a billiard ball, and is full of seeds. The leaves are trifoliate like the clover and are deciduous. The limbs are very thorny. The young seedling stocks grown from these seeds are reset each spring, and after two years are ready for grafting. Grafting should not be done until the sap begins to flow. Trees grafted on the trifoliate orange are said to be very hardy in Japan.

The principal nurseries for young citrus trees are located about 12 miles from the sea. The trees are protected in winter until the third year by wrapping them with coarse straw matting. The idea is to preserve the young growth, as there is little danger of injury to the mature branches. The Japanese see no beauty in an upright tree; rather they prefer them dwarfed and crooked. For this reason the young trees are not staked or trained. Another reason foi preferring the low tree is that the fruit can be picked without ladders, and also the moisture in the soil is thought to be retained better than when the soil is more exposed to the sun.

Cultural Operations

But little attenion is usually given to the cultivation of citrus trees in Japan. What cultivation is done is accomplished by hand, there being no horse or motor drawn machinery. The trees are often planted so close together that the branches interlock and vegetables and corn are not uncommonly planted between the trees. The groves usually appear as irregular patches on terraced hillsides.

Owing to the rainy summer in the principal citrus regions, irrigation is little practiced. The trees are sometimes watered in the dry season by carrying water to them in pails. Drainage and soil aeration are the main problems. Excellent open drainage ditches are often found and the trees are also often planted on ridges or mounds.

Night-soil, stable manures, litter and weeds are used to a considerable extent for fertilizers. Liquid manure is distributed with dippers by hand. Fish manures are occasionally used and commercial fertilizers are coming to be used to a slight extent.

Alhough lately some of the citrus growers have begun to prune their trees, the latter as well as other fruit trees are usually left unpruned. For this reason it is not uncommon to find orchards bearing a full crop only in alternate seasons.

Insects

No attention is paid to insects, except for the burning of the pupae of beetles. Scale insects are injurious in some parts and almost unknown in others.

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Reliable

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Citrus
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Established in 1890 by R. M. Teague

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Teague trees are started
right, grown right,
and shipped right.

RELATIVE SIZE IN FUMIGATION

Written for the California Cultivator
By C. W. Woodworth

THE measurements now always taken in obtaining the size of fumigation tents are the distance over the top and the circumference. Most tables now in use are incorrectly calculated because equal values have been given to both dimensions.

It will be evident at once that the distance over is changed with a change either in the height or the diameter of the tree and that therefore it is the more important of the two.

The possibiliy of adding to this dimension an amount dependent on the difference between the two measurements which will indicate the proportionate size of a tent gives us a new and very convenient and accurate method of rating a tree for dosage.

This we will call the "relative size" of the tent. If the proportions of a tent remained constant the distance over could then be taken as the relative size. Since the distance around always equals or exceeds the distance over we may select as standard a tent with these two measurements equal. The amount to be added to this to allow for wider and shorter tents is one-fifth of the difference between the two measurements. Thus a tent 20x30 would have a relative size of 22 and should have a dose equal to that of a tent 22x22. It will not be necessary to explain here why one-fifth is the correct factor. (Bulletin 220, Cal. Agr. Exp. Sta. p. 5.)

The adoption of this plan of relative sizes makes it possible to present a table of dosage in an exceedingly simple form and to make the adjustments for different degrees of leakage also very easy.

DOSAGE TABLE
OUNCES OF SODIUM CYANID

Relative									Leakage		*		*		*			.25%		*			*			*	%
Size		64	61	58	56	53	50	47	44	42	40	37	35	32	30	28	26	24	22	20	18	16	15	13	11	10	ft.
40	36	32	28	24	20	18	16	14	12	10	9	8	7	6	5	4½	4	3½	3	2½	2	1¾	1½	1¼	1	¾	½	¼

Relative size equals distance over the tent plus one for each 5 ft. of difference between the measurements.

Leakage more than .25 per cent is read to the left, and, if less, to the right, one number for each .05 per cent more or less than .25 per cent. Do not fumigate trees smaller than number of feet equal to .00 of leakage. Holes produce leakage requiring the use of the next number to the left when equivalent to a triangular tear half as many inches long as relative size and quarter as wide as long.

Stronger dosage for purple scale may be read one or two numbers to the left, and weaker dosage for black scale one or two numbers to the right.

Acid corresponding with any dose is given two numbers to the left, and water three numbers to the left of the acid dose.

In the foregoing table the approximate size of the minimum dose is indicated by asterisks for .25 per cent which is printed to emphasize that this table is for that degree of leakage.

The first line of figures gives the relative sizes corresponding with the doses on the following line. The intervals range from 1—3 and the dose intervals from ¼ ounce to 4 ounce. This corresponds quite closely with previous tables and with actual practice.

The table in fact will be soon memorized. It will be noticed that the intervals of the upper line just above 10 and 15 are one and that other intervals are two except just below 35 and 40 and above 44. The doses corresponding to 10, 20, 30 and 40 are ¾, 2½, 5, 9 and with 64 is 32 ounces. The intervals in the dose line are by quarter ounces to 2, half ounces to 5, ounces to 10, two ounces to 20 and four ounces to 40.

The acid and water dose is usually calculated mentally; if to be read from the table cut a card as wide as five numbers. Held against the table the two corners will indicate cyanide and water and a line on the card may be drawn to point to the acid dose. Or prepare a card by cutting out a hole or notch wide enough to enclose five numbers and have this line to indicate acid as before.

The mental effort in calculating the relative size will not be found to be difficult and is decidedly easier than the process of adding the two figures which is now done in obtaining the distance over.

A few examples will help in understanding the process. A tent 20x30 gives a relative size of 22 (difference 10 giving 2 to add to the 20) and the dose given on the table under 22 is 3 ounces. 25x37 gives a dose a little over 27 and the dose of 28 which is 4½ ounces would be correct.

Where the leakage is not .25 per cent or other factors enter into the calculation the process is still very simple and easy. Thus with a .30 per cent 23x28 tree the dose would be 4 ounces instead of the 3½ shown in the table on a .25 per cent leakage.

Taking about the most complicated case,—a 20x26 15 per cent tent with rents amounting to 10 square inches determine the weakest dose for black scale. The size would indicate 3 ounces and the dose would have dropped to 2 ounces because of the tight tent, but for the holes which moves the number to 2½ and finally the weak dose for black scale drops it down two to 1¾ which is correct under these conditions.

If one had in this case a .30 per cent leakage the tent should not be used because the relative size is less than 30 and efficient fumigation is not to be expected.

There can be no doubt that all these factors should be taken into consideration in fumigation if the best work is to be done and this dosage table may help to remove the difficulties which have hitherto seemed to fumigators to be insurmountable.

IMPORTATION OF CITRUS NURSERY STOCK PROHIBITED

The secretary of agriculture has issued an order effective January 1, 1915, prohibiting the importation from all foreign countries of citrus nursery stock, including buds, scions and seeds, except for experimental or scientific purposes by the department of agriculture.

This action is taken to prevent the introduction into this country of citrus canker and other citrus diseases found to exist in foreign countries and liable to be introduced on nursery stock.

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SUCCESSFUL ORANGE SHIPPING

Ten per cent of the Florida orange crop, it is esimated, decays before it reaches the consumer. Since the average crop is 4,000,000 to 5,000,000 boxes, this means an annual loss of at least half a million dollars, according to the most recent investigations, the results of which are published in Bulletin 63 of the United States department of agriculture dealing with the successful shipping of oranges from Florida. To the individual grower such a percentage may mean all the difference between profit and loss for his year's work, but, as the bulletin points out, the matter is largely in his own hands. Careful picking and packing will reduce the loss enormously.

To prove this, experiments were carried on for a period of two years with oranges shipped from Florida to Washington and held there under open market conditions for a period of three weeks. Each shipment consisted of six boxes, two handled entirely under the direction of the investigators, two picked in the regular commercial way but graded and packed with special care, and two taken at random from the ordinary run of shipments. The following table shows the results of this investigation, the different percentages of decay at the end of the three weeks being particularly impressive.

Blue-mold decay in oranges carefully handled and commercially handled on arrival in Washington and after holding for three weeks; summary of the results of the two season's work, 1910-11 and 1911-12:

Time of examination.	Careful pick and pack.	Commercial pick and careful pack.	Commercial pick and pack.
	%	%	%
On arrival	.06	2.0	5.5
After 1 week	1.0	3.3	8.8
After 2 weeks	1.5	4.5	11.8
After 3 weeks	2.1	5.8	14.2

From 79 comparable shipments made in 1910-11 and 65 comparable shipments made in 1911-12.

In securing these results no methods beyond the reach of commercial growers were employed. Indeed a number of commercial houses secured results almost as satisfactory as the investigators and one packing house reduced the average decay in its shipments from 15.8 per cent in 1910-11 to 4.1 in 1911-12.

The secret, the investigators find, lies in the prevention of blue-mold. "An injured orange," says the bulletin, "whether grown in California or in Florida, will decay whenever the conditions for the development of blue-mold are favorable. A sound orange in good healthy condition, whether grown in California or in Florida, is able to resist blue-mold decay."

Every orange man knows blue-mold when he sees it. It is caused by the growth of a minute organism within the tissues of the fruit, but this organism cannot penetrate the sound living tissue of a well-grown fruit. Before the disease can do harm, therefore, there must be a break or an abrasion of some kind in the skin of the orange. This is why full value for the crop can be obtained only by the most scrupulous care in picking and packing. Heat and moisture help the mold to grow in injured fruit; sound fruit will withstand the most unfavorable weather conditions.

Like many men, the Florida orange suffers from a thin skin. It is easily cut by the clippers in picking, by gravel, twigs, thorns, and especially by the long stems of other oranges, in field handling, and in packing is easily bruised by rough washing and handling. Many growers do not realize how delicate their crop is and say nothing while their workmen pick their pockets in sheer ignorant carelessness. Even the scratch of a finger nail will leave an opening for the blue-mold and all pickers and packers should be forced to wear gloves.

There are a hundred other ways, discussed in detail in the bulletin, by which efficient supervision can minimize danger to the fruit. Clippers with rounded or blunted points should be supplied the pickers and inspected frequently by the foreman to prevent their being used when dull or loose at the joint. The picking sacks should be designed with partially closed mouths so that the oranges must be carefully placed and not tossed in the sacks. They should also be emptied from the bottom in order to prevent bruises when the field boxes are filled. The boxes should be smaller because small boxes can be handled more easily and therefore with less roughness than the ones now in use. The fruit should not be permitted to project unprotected above the tops of the field boxes and more care should be exercised in transporting the boxes to the packing house. At present they frequently received a severe jolting in transit and the driver is too often permitted to make himself comfortable on top of the fruit.

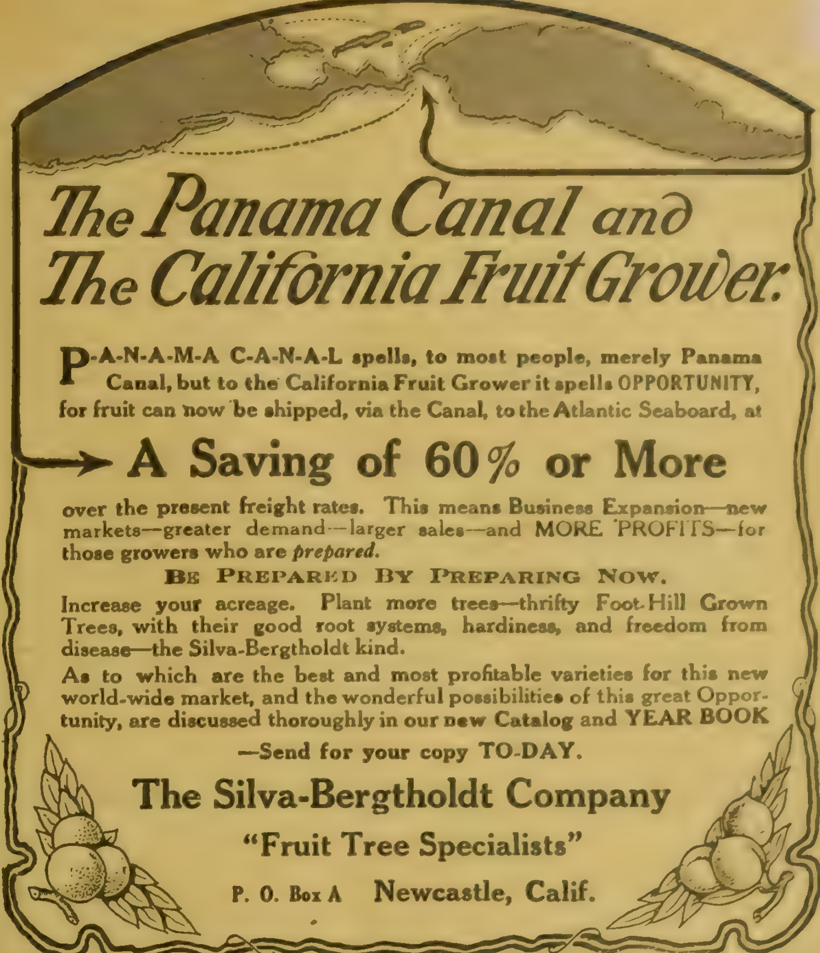
In the packing house similar precautions are essential. The machinery must be as simple as possible, even if simplicity involves an apparent waste of space, and so designed that the oranges are not subjected to drops at any stage. Twigs, splinters, and rubbish of any kind, should be guarded against in every possible way.

The importance of such care is more thoroughly realized than in former years. In particular, growers are discovering that the practice of paying pickers by the box leads to hasty careless work. When the picking crews are paid by the day instead and in addition subjected to energetic and efficient supervision, the percentage of injured fruit, and the consequent percentage of decay is much reduced. A capable foreman is, in fact, of the utmost importance. He should not be expected to pick himself but should be left free to watch the work of others. A really efficient man will save far more oranges than he could possibly pick.

Although strict adherence to the recommendations contained in the bulletin will greatly reduce the quantity of bruised and cut fruit that finds its way into the packed boxes, under the best of circumstances there will always be a certain amount that is susceptible to the ravages of the blue-mold. Moist heat is peculiarly favorable to the spread of the disease; therefore the fruit should never be packed while moist, and an artificial drier in which a warm air blast is circulated around the fruit seems to be a necessity if washing is resorted to. Washing, however, should be omitted whenever the fruit can be marketed without it for it is a common means of infection, the water in the tanks carring the blue-mold spore and the washing machinery tending to bruise the fruit.

"Curing" also, the investigators find to be unwise, in fact the shipping experiments showed that no advantage was gained by it. Where the fresh fruit is firmly and properly placed in the box, it is no more likely to make a "slack pack" than the cured. On the other hand the delay, especially in warm, humid weather, greatly increases the chances for the infection of bruises and cuts and thus facilitates decay before shipment and in transit.

For after all the important thing is the packing of undamaged fruit. If this is successfully accomplished the loss from decay can be minimized under the most unfavorable conditions. Precooling for example, while a valuable precaution, cannot be relied upon to offset the damage done by mechanical injuries. It is interesting to note that the investigators, from whose researches Bulletin 63 has been compiled, not only furnish mathematical proof of the importance of careful handling but report that this importance is now more fully realized than ever before by growers and packers.



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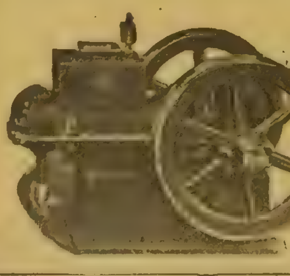

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Deciduous Fruits

APPLE CULTURE

By W. H. Lawrence, Arizona Agricultural Experiment Station.

IN planning a commercial apple orchard one should be careful to consider the extent to which the apple industry will develop in the immediate neighborhood; the probable magnitude of the industry throughout the entire section tributary to the markets in which he expects to sell his fruit; and the distance from a good local market and the condition of the roads during the hauling season.

Climate

Throughout portions of the state where water is available for irrigation at elevations exceeding 2500 to 3000 feet, may be found the more perfectly developed, highly colored fruit. Throughout the warmer portions of the state few varieties succeed well, the fruit produced being small, of poor color and extremely low quality. It is hardly advisable to attempt to grow apples, for other than home use or local consumption, in the warmer portions of Arizona. Commercial production of the apple may be undertaken, however, throughout those areas in which the climatic and other conditions are more favorable.

Soil

The apple will grow in almost any soil. The soil best suited, however, is a deep, porous type, that will absorb and hold a large per cent of moisture. The soil should be four to six feet in depth, and should be underlaid with a well drained subsoil. When dry farmed or where there is water for supplemental irrigation, the soil should be uniform, deep, of good physical structure, high water absorbing power and retentive of moisture. Any locality in which the water will collect and stand is undesirable. A still less desirable condition is one in which the water table rises to within a foot or so of the surface during the winter, and subsides slowly during the growing period. A covering of irrigating sediments on the soil is adverse to the growth and development of fruit trees. Such deposits usually prevent the penetration of water and air during irrigation, influencing the vitality of the trees.

Alkali

Apple trees are only weakly resistant to alkali salts, especially black alkali (sodium carbonate). Should alkali appear after the trees have been planted, the ground should be well cultivated to prevent the rise of salts as much as possible. Cover crops should also be grown that will fill the ground quickly with roots to a depth of several feet; and large volumes of water applied to wash the salts down into the subsoil. In case of the presence of black alkali, gypsum should be added at the rate of two pounds for every pound of sodium carbonate that chemical analysis reveals present in the soil.

Elevation

In selecting land for planting, high ground is preferable, where good air and water drainage are assured. The elevation of the orchard with respect to the adjoining lands should be such as to insure drainage from the area.

Exposure

In the cooler portions of the state the exposure may slope gently in any direction. Rather abrupt south, or southwest, exposures are to be avoided. In the warmer localities, however, the exposure should be a north one, the slope being gradual and not too abrupt, to admit of ease in caring for the orchard during irrigation, spraying, thinning and picking fruit. North exposures are desirable because of less absorption of heat by the soil and slower evaporation of water from the surface. The loss of humus and nitrogen is therefore somewhat less than from warmer exposures; and trees come into bloom later, remaining in bloom for a longer period of time. This permits more abundant pollination and setting of fruit.

Preparing the Land

To prepare virgin soil, care should be taken to destroy the surface rubbish, and to dig out all roots to a depth of a foot below the surface. The soil should be tilled until it is in the best physical condition. Should it need humus or nitrogen, or both, it is then advisable to grow leguminous crops, for one year at least. In setting an apple orchard, one is establishing plants whose roots will occupy the entire soil to a depth of several feet for many years, making it quite impossible to improve the condition of the soil with ease and at low cost, at a depth greater than a few inches below the surface.

Varieties

With our meager knowledge of the adaptability of different varieties to local conditions, the selection of varieties for planting is rather difficult. It is only possible to suggest a number of varieties that probably will prove suitable for various sections. Objectionable characters, such as shedding the fruit throughout the entire season, shy bearing, or failing to produce fruit of commercial size, may, nevertheless develop. The Bismarck, Duchess of Oldenburg, Golden Russet, Gravenstein, Red Astrachan, Rhode Island Greening, White Winter Pearmain, and all varieties of crab apples, may prove to be fairly good producers at elevations below 3000 feet. At most

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elevations exceeding 3000 feet may be found the Arkansas Black, Stayman's Winesap, Jonathan, Missouri Pippin, Delicious and Spitzenberg, as well as a large number of the more common apples of the red or striped varieties. Among the yellow varieties, the White Winter Pearmain, the Yellow Newtown and Grimes' Golden are apparently the leading sorts.

In this list only a few of the varieties that have proven to be good sellers on the general apple markets have been named.

Home Orchard

Selecting varieties for the home orchard is an easy task. One should select several, securing the most desirable sorts that mature in succession during the entire season. The winter or long keeping sorts should predominate, in order to have a sufficient supply to store for use until the trees are again producing fruit large enough to cook.

Should space for planting limit the number of trees, the entire assortment of varieties desired may be grown by top working each tree to two or more varieties. The Early Harvest, Red June, Red Astrachan, Gravenstein, Rhode Island Greening, Jonathan, Missouri Pippin, Delicious, White Winter Pearmain, Stayman's Winesap and Grimes' Golden make a good selection for the home orchard.

Commercial Orchard

In developing a commercial orchard, one should confine his plantings to a few of the very best varieties. These should produce long keeping, ready-selling fruit, that may be placed on the market in good condition during a long period of time.

The number of varieties to plant in a commercial orchard varies with conditions. In general, a five-acre orchard, unless the fruit is to be sold on a local market, should contain only two or three varieties. A ten-acre tract, or a still larger area, may contain up to seven or eight varieties. To ship long distances and compete with the same varieties from other apple-growing districts, the volume offered for sale must be large, the package neat and attractive, and the pack equal to the competing product. Volume usually makes it possible to establish trade, and for this reason the greater the quantity, the greater the possibility of securing reasonable returns.

Varieties in the orchard should be planted in two, four or six rows, etc., in order to facilitate spraying, thinning and packing the fruit.

Ordering Nursery Stock

Having decided which varieties to plant, it is quite essential to place the order with some reliable person or firm, who will fill the order as given. To plant and care for an orchard until it comes into bearing, only to find the varieties other than those you intended to grow, causes much financial loss, as well as much delay in bringing the orchard into bearing, since it then becomes necessary to top work the trees to desirable sorts.

Such a loss may be prevented by personally propagating the stock, or by arranging with some reliable person to do the work for you. Apple trees of all sorts show great variations in character, and it is necessary to make a study of individual trees, so that propagating stock may be selected to the best advantage. Propagate only from healthy specimens of a variety true to type, producing heavy yields of fruit, with characteristic physical qualities also true to type.

Budded stock is preferable to grafted stock, since it is less apt to be infested with crown gall and hairy root.

It is generally conceded that nursery stock will give the best satisfaction when secured from a section having about the same climatic conditions as those under which the orchard is being planted. The method of handling the nursery stock from the time it is dug until it is set in the orchard is of still greater importance. Unless dug properly, packed and shipped correctly, heeled in or planted at once and otherwise given the care necessary to keep the stock in healthy condition, the results during the first year, and possibly thereafter, will not be very encouraging.

Kind of Trees for Planting

In ordering nursery stock, it is best to specify one-year-old stock. Such stock usually has two or three-year-old roots, generally three years of age, with a top one year old, grown from the bud or scion. Trees of this age are preferable, a majority of them being free from branches. They should measure about five-eighths of an inch in diameter at the collar, stand four to six feet high, and have good strong

(Continued on Page 663.)

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Irrigation Forestry

IRRIGATION PRACTICE IN THE SACRAMENTO VALLEY

By W. S. Guilford, Before State Fruit Growers' Convention at Davis

IN discussing irrigation practice in the Sacramento Valley I shall attempt to cover some of the points that seem to me to have been the cause of success or failure, both with new settlers who are buying subdivision acreages and so-called "old timers" who are abandoning extensive grain farming wholly or in part for more intensive operations under irrigation.

Such propositions as the duty of water, cost of pumping plants, comparative value of plants of different kinds, and many other highly important factors have been or are being worked out by investigators with time and appliances for such careful and scientific studies. Many of the things I will touch upon are so simple and self-evident that it would seem that no thinking person would ever do them wrong, yet they are repeatedly the cause of inconvenience and loss in every irrigated section in the United States.

IRRIGATION AS PRACTICED IN SALT RIVER VALLEY, ARIZONA
Courtesy Phoenix Board of Trade

The first consideration in connection with a prospective irrigated farm is:

Choice of the Land

Factors which govern the value of land for an irrigated farm are character of soil, contour, irrigation facilities and transportation.

The soil should be selected with reference to the crops to be grown. In almost every part of California where land is for sale it is possible to find land similar to that which it might be thought desirable to purchase, growing profitable intensive crops. If the principal crop to be grown by a prospective settler is prunes, for instance, and in the neighborhood of a piece of land he has selected prunes are being successfully grown on similar land, he can be reasonably sure of his choice so far as crop adaptation is concerned. In general a rich soil, well drained and free from hardpan and alkali should be chosen.

Then there is the cost of leveling to consider, and land with an even slope free from deep depressions that will have to be filled and not so level that it has to be moved long distances in order to make the water run, can often be leveled for irrigation for $20 to $30 less per acre than some other land.

The kind of an irrigation system from which water is to be secured, whether from gravity flow or pumping, is a consideration that affects future profits. If water is to come from wells the assurance of a supply is of importance, also the cost of pumping and maintenance: The same applies to water from a gravity project. A stream must furnish water throughout the season to be of the greatest value.

Many of the products from an irrigated farm are bulky, and transportation from the place where they are grown to the railroad or boat and the cost of sending them to market must be figured for a term of years. It is possible for the cost of hauling heavy crops to a loading point to be a large percentage of the total cost of production.

Unless the prospective purchaser is familiar with soil, crop adaptation, the labor and cost of preparing land for irrigation and the cost of water under different systems, he should get advice on these points from some one who does, for a place well selected and well bought is well started toward success, while some otherwise good prospective producers of crops are so handicapped by wrong selection of land that it takes years for them to surmount the handicap—if they are ever able to. The average person does not hesitate to pay for medical or legal advice. Why should he hesitate to obtain the best possible counsel on a matter that concerns his future success in so vital a matter as the selection of land for a farming business?

The Object of Irrigation

Irrigation is practiced to supply to the soil in the area in which roots take plant food a sufficient supply of moisture for the best possible development of the plant. Many different methods of applying water are necessary to accomplish this result with the different kinds of soil. This is what makes every sucessful irrigator a student and is the reason why an ingenious, thinking person gets better results than one who simply "irrigates" without knowing what the water is doing.

There is no better way to learn what the condition of the soil is than to dig holes in it, before and after irrigation, to find out how dry the soil is and whether or not the moisture has penetrated to the proper depth.

On one large deciduous orchard in Glenn County we have just dug good sized holes in every part where there are apt to be different soil conditions. This was done to find out how fast the moisture is drying out, how well the mulch is holding the moisture and how far down the tree roots are. The trees were planted last year. We found that wherever we were able to disk the land and get a good mulch before the soil became hard and dry there was plenty of moisture; in one place an irrigation now will connect the lower moisture up to where the greatest root development is (two to three feet) before it gets so low that the tree will suffer. To irrigate now and carry these few trees through without a check is worth many times the cost of digging all of the holes.

While the water is running the depth of penetration can be determined with a sharp pointed steel rod, and every irrigator should use one of these frequently. It can be shoved into the ground easily to the depth that the moisture has penetrated.

Until we have more definite data as to the moisture requirements of plants, and some easy method by which the irrigator can test the soil for moisture content, the condition of the plant and the soil as observed by the operator is one of the best guides as to when irrigation is required. It is difficult to tell just what to look out for in the plant when it begins to need moisture, but the careful, observing man readily learns to recognize the signs of need or distress. For instance, the foliage on a potato plant which is getting dry becomes a dark, almost black, green which can be distinguished almost as far as the plant can be seen. It is very different from the normal, healthy green of a plant well supplied with moisture, and different again from the sickly light yellow that is produced by excessive irrigation.

In order to be of the greatest possible benefit to the tree or plant irrigated, moisture must penetrate as deeply into the soil as the roots can feed to advantage. Water penetrates open, sandy soil readily, and the biggest problem in this kind of land is to get it over the surface without wasting too much through the subsoil. Checks or furrows must be short and a big head of water used.

Where the land is heavy, with a large percentage of clay and silt, as it is in a great part of the Sacramento Valley, the difficulty is to get enough penetration. When the soil is thoroughly dried out to a considerable depth, as it was last year, a small stream of water must be run for a long time before it penetrates three to five feet. Two years ago at the Monroeville orchard of the Sacramento River near St. John in Glenn County, the soil was thoroughly dried out to a depth of 15 feet and the rains of the winter of 1912-1913 penetrated only two or three feet and did not connect the lower with the upper moisture. During the season of 1913 we were compelled to run small streams along the tree rows for 10 days in order to get a three to five foot penetration as indicated by the steel rod when shoved into the furrow, but irrigators were required to get this penetration and so control the streams that very little was wasted at the end of the 660 foot rows.

In our orange grove at Orland, which is on very heavy clay land, in fact I do not know of any heavier soil in the Valley, it had been the practice for years whenever it was irrigated at all to flood the land. After government water was available three or four years ago it was flooded every 10 days or two weeks and cultivated between irrigations. This practice was rapidly breaking down the granular structure of the soil and burning out the humus and vegetable matter, and following the first irrigation after we purchased the place in June, 1912, I could find no place in the orchard where it was possible to stick a spade —or even to dig without a pick—over nine inches into the soil. For the next irrigation we plowed four furrows between the rows, made head ditches and controlled the water in the furrows through lath boxes. The soil was so hard that it was almost impossible to plow the furrows, it being necessary to go through two and three times with the plow before they could be opened up enough to run water. Too large a stream was turned in for the first irrigation, and the bottoms of the furrows silted over so that the water ran through the 400 foot rows almost as well as though the furrows had been cemented. They were furrowed out again, a little deeper this time, and a small stream turned in that required 24 to 48 hours to get through the rows, soaking in pretty well as it passed along. Such an extreme measure as this is seldom necessary, but it certainly was in this case, and we kept a small stream running for four or five day periods, cultivating and furrowing out between times nearly all of the summer season of 1912, and irrigated a great deal in the same way during the dry winter of 1912-13. The problem of getting moisture into the soil for the use of the root systems of these trees involved supplying vegetable matter to the soil in every available form, straw, manure, prunings and weeds. Now we are just getting a good enough soil condition to grow an abundant crop of wild oats, burr clover, alfilaria and other plants, and we have allowed this vegetation to become quite mature before plowing it under this year. If we can get a satisfactory seed bed soon we will probably plant alfalfa and let it stand two or three years before plowing the orchard again to further open up the soil and subsoil and improve its physical condition. Deep furrows will be plowed out so that irrigation water can be supplied. I do not believe this practice would be advisable unless an ample supply of irrigation water was available, but fortunately there is no shortage of water in the Sacramento Valley.

(Continued on Page 664.)

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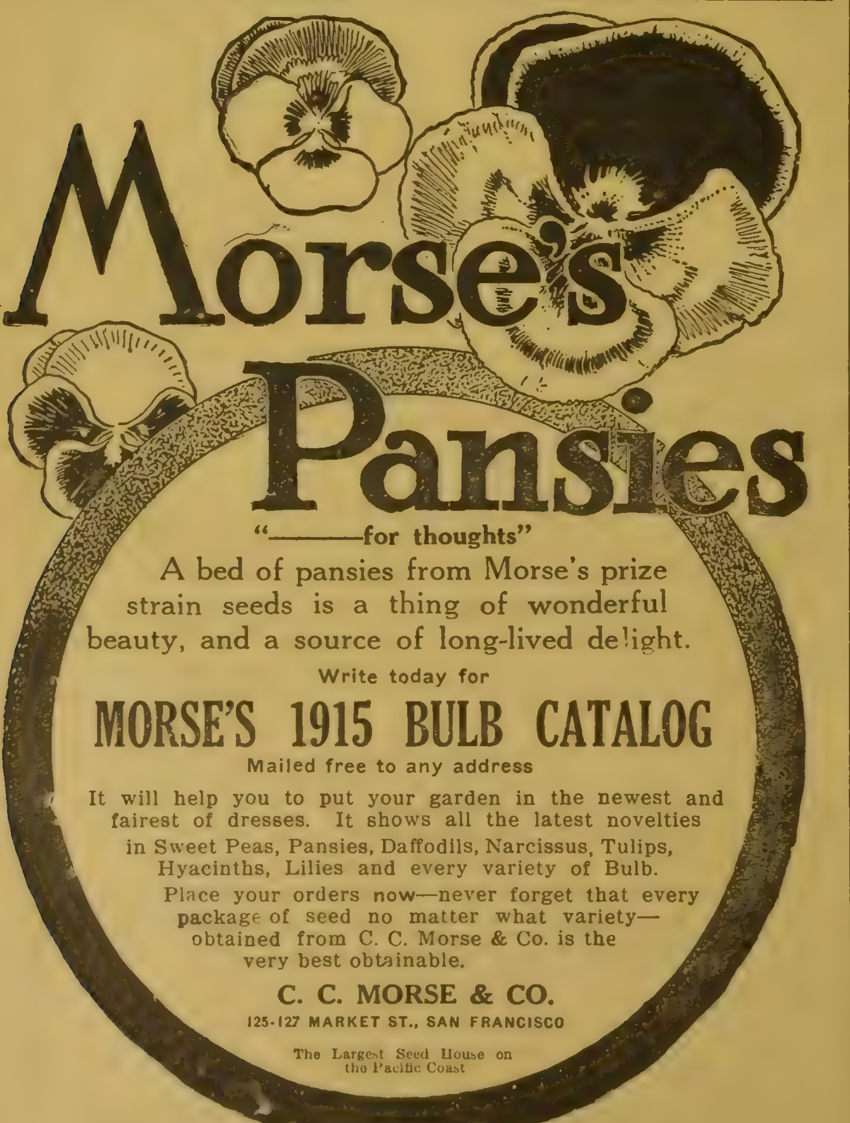

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THE CALIFORNIA GARDEN

Written for California Cultivator

By Ernest Braunton

MUCH has been written of the value of the common earthworms, "angleworms," or "fishworms," to agriculture, but in the garden they are a pest to be discouraged. All the good they do in aeration or ventilation of the soil or pulverization of it through eating and after voiding, is more than offset by the harm they do in eating bulbs and other underground vegetation. Many times have I found a fat earthworm coiled about a gladiolus bulb, eating away the root crown, and in some cases this was all gone and the entire value of the bulb thereby destroyed. Only when the soil is dry will the villains retreat to greater depths.

For these worms have a mouth, lips, crop, gizzard and many other organs common to higher animals. And while they neither see nor hear they have a slight sense of smell and a well-marked taste. They live largely on decayed vegetation and drag leaves and parts of leaves into their burrows, but their range of food is large and green leaves are eaten as well. They have been watched while eating fresh leaves of cabbage, turnips, horseradish, mint, celery, carrot and a long list of common plants. Food dragged into their burrows is moistened with a secreted fluid which has been thought to hasten their decay so that they are partially digested before eating, much as some carnivorous plants such as sun-dews, fly-catchers, and others in turn consume worms and insects. Much might be written of these earthly inhabitants, but the one point for us to consider is: Are they beneficial to the garden they inhabit? After years of study of the subject I would prefer, in the interests of gardening, to harden my heart and kill every living thing found in the soil, for all are harmful, and if the earthworm has a redeeming economic characteristic it is cannibalism, and I would destroy him for that, too.

Division of Bulbs

A question very commonly asked is: "How often shall I take up and divide my bulbs?" It is more often asked about amaryllis bulbs than any others, for the average home gardener tackles everythig else without compunction, but from the dormancy of amaryllis and being out of season with the great majority of bulbs apparently constitutes an exception, yet facts do not bear out the assumption. Divide all bulbs once in three years, also all roots and plants easily capable of division unless large clumps are desired. Even then it is best to dig some out of the center of each clump and refill the hole with new, rich soil. Many bulbs are best dug up each year and divided before replanting.

Asafoetida a Safeguard

It is claimed that asafoetida will keep away quite a variety of insects, especially the beetles that infest melon and cucumber plants, and we believe it; it would keep us away as well. Put about an ounce into hot water until all is dissolved, then add water to make two gallons. Sprinkle this over the vines in the evening or very early morning. The bugs will have business elsewhere that claims their immediate attention.

Stir Soil Now

If you are contemplating new planting the present is an excellent time for soil preparation for later planting. Too many urge one to plant, plant, plant. When soil is cold and all plant life inactive, why plant? Deciduous fruit trees are now dormant, and they are far hardier than citrus trees or the general run of plants we use, none of which will compare with apple and pear trees for hardiness, then why rush planting with soil illy prepared. If soil has been stirred deeply and well-aired, if well-fertilized, no serious objection to present planting is urged. Yet now is the time to stir soil deeply and thoroughly, to properly mix in fertilizer, not merely turn it under. Then, when later planted areas so treated will respond with an early vigorous spring growth that will amply pay and satisfy for the careful preparation given. After planting it is difficult to reach the soil beneath tree or shrub.

Reckless Use of Fertilizers

It is well to remember that when local temperatures are at lowest ebb or during the coldest weather of our so-called winter, soil bacteria cannot act, being dormant, and therefore usual methods of applying fertilizers are without immediate results. Nitrate of soda will alone yield an immediate return, and this brings us but one element of plant food, though the most essential and most costly, viz., nitrogen. Heavy mulches of stable manure blanket the soil and keep it cold and inactive. Their chief food value lies in the ammonia therein contained, and if hard rains come this is washed away to other lands, into the gutters, or leaches down in loose soils to a depth where it is unavailable to a major part of common garden plants. Give the subject of fertilization a little scientific study; it may save you from some profitless expenditures.

Do Not Trim Acacias

Avoid trimming acacias at this time unless necessary for safety of trees or convenience of pedestrians on streets, for you will cut away much of the spring crop of blossoms. A careful glance at any acacia now will reveal the buds present on all branches and bring you to a realization of the loss of flowers you will sustain through pruning at present. Pruning for flower crop should be done immediately after the close of the blooming season.

Be Patient

Just now we are having the coldest weather of the year, and too much must not be expected of plant life, for at no time is it so inactive or nearly dormant as at present. As warmer weather comes all vegetation will the better respond for this period of rest and the aggregate results will amply satisfy if no other check is present except a comparatively low temperature. A few hardy plants, as a few hardy people, are stimulated by cold weather, but too many of our plants are native to warmer climes and cannot put on warmer clothes or take other necessary precautions to be able to withstand cold snaps, so do not be impatient, the worst is with us and the best is yet to come.

Treatment of Bulbs

Now that Dutch bulbs and others of like season and similar requirements are growing, it is pertinent to ask if they are receiving sufficient food. Unless the soil is rich it may be as well to feed them, and this is best done with commercial fertilizers or liquid manure. Applications of stable manures, unless most thoroughly rotted, are to be discouraged, and in any event will not bring results quickly enough to do much good to the present crop. So that commercial fertilizers are better used in solution than dry unless very evenly distributed and well mixed with the top soil. Nitrate of soda, used alone, will hardly do, for it is productive of foliage rather than of flowers. A fertilizer carrying a good balance of nitrogen, phosphoric acid and potash is needed. If the soil is rich enough an application of air-slaked lime, well mixed with the top soil, will suffice.

Spring Pruning of Roses

If roses have not yet been pruned this season do not attempt it now, for it is three months too late for fall pruning. Cutting back now will bring only tender shoots and buds as spoils for sharp frosts. Better now to leave bushes unpruned until the coldest weather is over and then get a glorious spring crop of flowers. The writer year for spring crop, but severely prunes the majority before October, to get winter flowers. This treatment is best for the warmer sections. aims to leave part of his roses each Where the temperature runs down to freezing point every night for weeks there are a few good winter roses, the good old-fashioned Laurette being the best of well-known sorts. In the cold sections severely prune in very early spring or after heavy frosts are past or unlikely to continue long.

Small Fruits Vegetables

EXPERIMENTS WITH UDO

FOR persons who like novelty an interesting experiment is offered by the new Japanese vegetable, udo. Nurserymen have grown the udo under the name of Aralia cordata for ornamental purposes, for twenty years or more, but as a vegetable it is still comparatively unknown. On rich soil it grows to a height of 10 feet or more, producing a very ornamental mass of large green leaves and, in the late summer, flower clusters, sometimes three feet in length. In appearance it is much like a larger variety of the spikenard or pretty morel, a native of our woodlands.

The blanched shoots of the udo have a characteristic flavor. Properly prepared they are delicious—or so the author of Bulletin 84, just published by the United States department of agriculture under the title of "Experiments with Udo, the New Japanese Vegetable," has found them. The plant requires little care and with the same space devoted to it, yields approximately the same amount of food for the table as asparagus and is ready for use at about the same time in the spring. After the first frost it dies down each autumn to come up again in the spring, much as asparagus and rhubarb do. A patch of it can be forced each spring for at least six years and probably much longer. The flowers attract bees and flies in such numbers that a field of it is usually humming with insects. As a honey plant, therefore, the udo deserves the attention of beekeepers.

Udo growing is not yet sufficiently general in this country for the most inexpensive methods of cultivating to have been worked out, and conditions in America are so different from those in Japan that little benefit can be derived from the experience of Oriental growers. It is, however, reasonable to assume that the cultivation of the udo presents few difficulties. It is adapted to a wide range of climate, as is shown by the fact that it grows all over Japan, but no part of Japan suffers from drouth. In this country the udo has done best in moist regions, in particular in New England, the Atlantic states as far south as the Carolinas, in the rainy region of Puget Sound, and in the trucking sections of California.

Where greenhouses or cold frames are available, the seed should be planted in March or April—one-fourth of an inch deep in soil that consists of equal parts of loam, mold and sand. As soon as the plants are three or four inches high, they can be planted out in the ground or potted and set out later. Thereafter the udo needs little attention. Its roots spread with extraordinary rapidity through loose rich soil—udo is not recommended for poor, dry land—and the crowns soon become at least a foot across. Three and a half or four feet is therefore not too great a distance to allow between plants.

Perhaps the greatest difficulty connected with the cultivation of the udo is the blanching of the shoots. It is these that are regarded as the real delicacy, for the flavor of the stems when green has a certain rankness which is unpleasant to most palates. Various methods of blanching the early shoots have therefore been experimented with. In California excellent results have been obtained by mounding up the earth in the early spring over each plant much as is done with asparagus. Elsewhere, however, the late frosts make the soil too cold and the shoots are slow in coming through.

Another method is to put a large drain tile, with one end closed, over each hill before the spring growth starts. The shoots which come up inside the tile are well blanched but they show a tendancy to produce a number of unopened leafstalks which take away from the robust growth of the shoots. To obviate this, casks or boxes filled with light material such as sand or sifted coal ashes have been tried with considerable success. In any case great care must be taken not to permit the shoots to break through into the sunlight. If they succeed in this, they at once become green and their flavor rank. Shoots can be cut when only six inches long, but it is better to let them grow to 12 or 18 inches.

In the cooking of udo there is still abundant room for innovators. In all experiments, however, one thing must be remembered. When raw, the stems contain a resinous substance which gives them a decided, and to many persons unpleasant, taste of pine. It is, however, easy to eliminate this by soaking thin slices of the stems in ice-cold water for an hour or two, or by boiling them in two or three waters, as is often done with strong-flavored vegetables. The author of the bulletin, who has been experimenting for eight years with udo on his Maryland farm, suggests the three following recipes as samples of what can be done with the vegetable:

Udo On Toast.

Peel the shoots and drop them into cold water. Cut them into four-inch lengths. Boil them in salt water for 10 minutes, then change the water, adding a fresh quantity of salted water and boiling until quite soft. Prepare a white sauce, such as is used for cauliflower or asparagus, put the udo in it, and allow it to simmer until thoroughly soft. Serve on toast in the usual way. If there is too much of the pine flavor, as there may be if the shoots are not thoroughly blanched, a second change of water will remedy this.

Udo Salad.

Peel the shoots, cut them into three-inch lengths, and then split them into thin shavings, letting these fall into ice cold water as they are made. Allow them to soak in the water for a half hour or an hour, so as to remove the resinous material in them. Serve with a French dressing of pepper, salt, oil and vinegar. Do not dress the shavings until just before serving, as they become stringy on standing in oil.

Udo Soup.

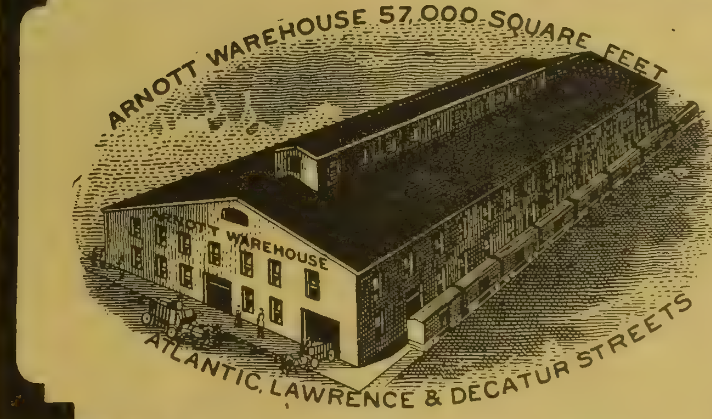
Remove the skin from the shoots. Cut in pieces one-half inch long and wash thoroughly in cold water. Cook until tender and mash through a colander. Add a pint and a half of milk, one-half pint of cream, two tablespoons of butter, and one tablespoon of flour, mixing the flour and butter until smooth. Season with pepper and salt. (Recipe for one bunch of udo; enough for five persons.)

Just how popular the udo will become, is not predicted. It is desirable, however, that amateurs experiment with it for it is not at all impossible that udo prove a valuable addition to our table vegetables.

POTATO EELWORM

Quarantine Order No. 6 was duly issued by the state of California against the potato eelworm, Heterodera radicicola, and at the time of its issuance was deemed necessary for the protetion of the state. On December 23, 1911, Quarantine Order No. 7 was declared revoking Order No. 6, and containing certain qualifications or conditions. As occasion no longer exists for the qualifiations or conditions of Quarantine Order No. 7 it is hereby revoked.

It is urged, however, that all potatoes, whether home grown or from any other state, be carefully inspected and that any infested with eelworm be rigorously excluded.—A. J. Cook, State Commissioner of Horticulture.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Economics on the Farm

COOPERATIVE MARKETING OF AGRICULTURAL PRODUCTS

THE following article is summarized from one appearing in the Monthly Bulletin of Economics and Social Intelligence.

The problem of improving the economic and social position of the farmer is probably, at the present moment, the most discussed question in the United States. The American farmer is dissatisfied; and, as he represents the most important industry and the most numerous class of workers in the country, he is able, naturally, to insist that his grievance shall be heard.

Briefly, his grievance is that the prices which he receives for his products are too low, and that, in view of the prices ultimately paid by the consumer, he is being unfairly squeezed by the middlemen. It is contended that the farmer, who works laboriously and bears all the risk of production, receives as his reward, only from 30 per cent to one-half of the retail price received for his products. The remainder is absorbed by the middlemen who bear little or no risk, and who—though this is implied rather than stated—do not work hard.

THERE IS MORE POWER FARMING IN CALIFORNIA THAN EVER BEFORE

The figures quoted in the article in question prove that the complaint of the American farmers is not without foundation.

An inquiry made in 1910, in 78 cities throughout the country, revealed the fact that the dairy farmer received a bare 50 per cent of the retail price for milk. The cost of transport averaged 7 per cent of that price, and the remaining 43 per cent went almost wholly to the retailer. According to the findings of the industrial commission, which reported in 1901, the farmer received 55 per cent of the consumer's price for poultry; 69 per cent for eggs; 55.6 per cent for apples, and only 20.3 per cent for oranges.

The secretary of agriculture, from the results of a number of official investigations, draws the general conclusion that "the distribution of farm products is considerably involved, and burdened with costly features," and it is generally admitted that there is much overlapping and waste between the producer and the consumer.

One of the remedies most frequently proposed is the formation of farmers' cooperative selling associations, and a very large number of such associations already exist. In California, among the citrus fruit growers, they reach their most highly developed form, and are strong selling organizations with effective control over the produce of an entire district and a powerful influence on prices. The typical California selling association consists of as many as 100 local associations, closely federated into a single selling agency. Co-operative selling has also achieved considerable success in the New England and Atlantic states, especially among growers of small fruits and vegetables. In 1912, one association—the Eastern Shore of Virginia Produce Exchange—shipped 4600 cars of potatoes, 230 cars of strawberries, 150 cars of cabbage and 100 cars of onions. It had at that time more than 2500 members, all under contract to sell exclusively through the exchange.

As a rule, however, farmers' selling associations are on a smaller scale and are less strictly organized. Occasionally an association does no more than pool the produce grown by

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its members and make a collective bargain with the local buyer. At the next stage the association owns a central packing-house, assembles the produce, and offers it to competing markets in carload lots. By shipping in bulk a very large saving is usually effected in cost of transport.

That a cooperative association may be directly successful in raising prices is proved by the history of the Southern Rice Growers' Association. In January, 1911, when this association began operations, rough rice was selling at $2.30 a barrel, and the whole industry was disorganized. The association at once showed its strength by buying 250,000 barrels of rice and exporting it to Europe, bearing a loss of $65,000 on the transaction. Both growers and merchants acquired confidence in the association as the one body able to maintain steady prices, and in its second season the Southern Rice Growers' Association marketed the whole of the rice produced by its members at $3.60 a barrel.

The cooperative movement among American farmers is receiving sympathy and encouragement from many sides. The United States department of agriculture has undertaken to investigate existing conditions and to publish accurate information. A special division has been created under the title of the office of market investigations, and the whole process of marketing farm produce of every kind is being studied step by step from the producer to the consumer.

General Agriculture

OPERATING THE TRACTOR

FROM The Modern Gas Tractor, Its Construction and Operation, we quote a few paragraphs touching upon operating the tractor.

Advice on Tractor Operation

The operation of a gas tractor will not prove difficult to an engineer familiar with steam tractor operation or to one who is familiar with automobile driving. The main point to remember is that the tractor may be stopped immediately by disengaging the master clutch and applying the brakes. One who has never controlled a heavy machine of this character will first have to become familiar with operation of the steering mechanism. An automobile is provided with a steering gear that is quick to act and one and a half turns of the steering wheel is all that is necessary to turn the wheels from one extreme position to the other. This sensitiveness is necessary on account of the high speed automobiles are capable of. With a tractor conditions are different, the speed is low and considerable weight is supported by the front wheels. This means that a greater number of turns of the hand wheel will be required to steer a tractor than will be needed to direct a motor car. This is necessary because less effort is required from the operator on account of the lower ratio on the worm reduction gearing, and as the tractor is traveling at a comparatively low speed the operator has ample time to turn the hand wheel any number of times that may be desired to insure movement of the front wheels. Most tractors are provided with a crank or small handle extending from the rim of the steering wheel so that this member may be revolved at a higher rate of speed than would be possible if it were grasped around the rim.

The tractor operator should always be careful when operating on highways to avoid hollows or soft ground and mudholes should always be passed by making a detour instead of steering the heavy machine recklessly through them. Care should be taken in passing over bridges to make sure that these are of ample strength as many flimsily built wooden structures have failed under the great weight of the tractor for which they were never designed. If the tractor becomes mired and the differential lock is not available pieces of plant, brush, straw or anything that will help traction may be put under the driving wheels. If one wheel is on dry land a tractor will often free itself provided that the differential gear is temporarily put out of commission. This can easily be done on most tractors by bolting a lever carried by the revolving axle shaft to the wheel hub that normally revolves free around it when the differential gear is in operation. This insures that both wheels will turn with the axle and the wheel that is on dry land will provide traction enough to move the machine under these conditions. If the differential gear were in operation the traction member that was in the mudhole and which had the least adhesion with the ground would just spin around, whereas the other member would remain stationary.

On two and three speed tractors the operator should always use that ratio best suited for the work the tractor is doing. In getting from place to place over the roads and for hauling light loads the highest speed of a three-speed tractor, which is about six miles an hour, can be used. For hauling heavier loads over the highways the medium speed, which is about three and one-half or four miles per hour, will give the best results. For drawbar work where considerable power is needed the lowest gear ratio, which is seldom over two miles per hour, should be used. The tractor should not be operated on the low gear except when conditions demand it and if the load is light it is preferable to run on one of the higher gears and throttle the engine down than it is to run on a low gear ratio and run the engine at full speed.

When operating a tractor over hard roads, especially those of the macadamized variety, the operator owes it to the public to remove the grouters, traction points or mud lugs from the rear wheels and run on the smooth steel tire. The use of grouters cuts up a road too much, whereas running with steel tires offers enough adhesion to secure traction on a hard road and at the same time the road is benefitted by the rolling action of the large wheels, rather than being cut up as is the case when the projections ordinarily fitted to increase traction in the field are fitted.

HOME MADE GAS

Use an oil drum or any solid tank of at least 25-gallon capacity. In one end of this bore three holes; one for hand hole and to pour in gasoline, one for a bicycle valve to pump in air and one for the gas discharge pipe. Set the drum in the ground full depth and fill in the bottom for about four inches with hog hair and place wire screen over this and the gas plant is complete.

To operate. Pour in about one quart of gasoline (more or less as your needs will determine) each day and pump up with bicycle pump to give pressure. The warmth of the ground evaporates the gasoline. This will supply clean gas to be used for both heating and lighting and may be piped any distance.—H. E. Van Horn, Kerman.

USES OF TUNGSTEN

Tungsten is used principally as an alloy of high-speed steel—that is, steel used in making tools used in metal-turning lathes running at high speed—to which it imparts the property of holding temper at higher temperature than carbon steels will, according to the United States Geological Survey. The new well-known ductile tungsten is used for incandescent lamps, which are fast displacing carbon lamps. Recently greatly improved lamps, in which the wire is wound in helices and in which the globes are filled with nitrogen, have produced a close approach to white light. These lamps are furnished in candle powers up to 2,000. Ductile tungsten is practically insoluble in all the common acids; its melting point is higher than that of any other metal, its tensile strength exceeds that of iron and nickel, it is paramagnetic, it can be drawn to smaller sizes than any other metal (0.0002 inch in diameter), and its specific gravity is 70 per cent higher than that of lead.

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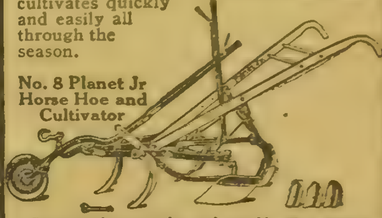
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THE FARMING INTEREST

The interest in farming is on the increase, has been for some years, but never has it engaged the serious attention of so many of the great men of affairs as it does today. At the annual dinner of the leading club in Sacramento recently, at which were gathered the big men of affairs of the city and adjacent territory, one of the chief topics of conversation was farming. Wheat, hogs and reclamation, the problems of settlers, the coloring and ripening of oranges; these and many kindred subjects were discussed. None better than these bankers and business men realize that the future of the cities and the state depend on the upbuilding and prosperity of farms and farmers.

THE STATE BEAUTIFUL

A speaker at the recent nurserymen's convention at San Diego urged the delegates attending to go to their homes and talk and work for the alley beautiful, the park beautiful, the clubhouse and surroundings beautiful, the church and home beautiful, the state and the country beautiful. If there was ever inducement for California to dress up it is this year. The rains have come and the ground is fitted for starting poppy seeds and every other kind of wild flower which add so much to our beauty. Let this be encouraged just so far as possible and let every countryside, no matter how remote, take up with the spirit of 1915 and get busy in preparation for our visitors.

NATIONAL ORANGE SHOW

February 17-24 has been set apart for the coming National Orange Show at San Bernardino. A strong committee of boosters and workers has been chosen and the greatest exhibit of citrus interests ever staged has been planned for exposition year. The citrus industry of California has grown beyond the dream of the most optimistic, and it is well that it should have a special exposition such as has been held in San Bernardino for several years. The management says that indications are the coming show will be the greatest ever. Far away Butte County has already announced her intention of entering the competition.

NEXT CONVENTION

The 46th State Fruit Growers' Convention will be held at Stanford University according to present announcement the last week in July, but a private letter from Dr. Cook intimates that the convention may be held over until some later date. The next American Pomological meeting is at Berkeley in September, and it is possible that the state convention may be delayed until about that time. Dr. Cook writes that he anticipates half-fare will be granted on all railroads. The woman's department which proved so attractive at the Los Angeles convention will be continued and will be in charge of Miss Clark of the state university. One of the principal features to be discussed at this convention, it is announced, will be pear blight. It is also announced that one-half day of this convention will be given up to a ride through the Santa Clara Valley.

SECOND LARGEST

The University of California is the second in size of all the American universities. Its registration at the end of November was 8,481, or 1,215 more than a year ago at the same date. Columbia University in New York alone exceeds it in number of registrations, it having 10,961 students. But more than 5,000 of Columbia's total are summer session students, a much greater number than that of California, so that California's total of full-course students is practically the same as Columbia's. The next university following California is Pennsylvania, with something over 7,000. Then comes Michigan with 6,000, New York, Illinois, Ohio, Wisconsin and Cornell following in order named. In the list of universities in the United States Harvard is 11, Yale 14, Stanford 19, while Princeton is 21, the latter having a total attendance of 1,665. The registration in January is expected to greatly increase California's attendance.

A GREAT SEASON

Certainly Santa Claus never put a greater present in the stocking of California than he has this year; the last rain has soaked the soil from Shasta to San Diego, and it with other conditions make up a most happy Christmas and New Years season. The prune and the hop growers of the north and the cotton growers of the southern end of the state and incidentally all the rest of us feel somewhat the financial depression which has prevailed since the opening of hostilities in Europe. Notwithstanding this and a few other discouraging features the new year will open with large promise. For one reason it is "1915," which has been a word to conjure with for the past five years. The canal is completed. The two great expositions are almost ready to swing their gates, and the Golden Gate, the Silver Gate and the harbor newly created at Los Angeles are all open to the traffic of South America and all the world. With the markets of the world asking for the California products a responsibility is laid at our door and the best of it is we manifest a disposition to accept the responsibility.

Let it be a year for the production of staples which will be needed for feeding the hungry.

CENTRALIZING INDUSTRY

Question has been asked as to the poultry packing industry being centralized as has the meat packing industry. At first thought one will say "Decidedly not," for it is on so different a plane; the small poultryman or farmer can handle his poultry in a way to appeal to the market which he has to serve. But note we say "can handle." Does he as a rule? Does he put up his poultry in an attractive manner or is it simply killed and delivered to the market in any slipshod way? We believe that the poultry people are studying their own industry. It may be they will perfect a system whereby the producers will have full control of it, but if the consumer finds that he can secure the finest goods by dealing with the packer who has studied conditions and fattens and packs in a way which attracts these buyers, while the producers do not, then the industry will surely be controlled by the big packer. The suggestion has been made to control this tendency toward centralizing by bringing communities together in construction of small packing plants. In communities where there is a sufficiently high intelligence to permit of full cooperation it is possible such an experiment might prove successful.

AN ALFALFA HAY LESSON

J. H. Hale, the great peach grower of Georgia and Connecticut, who took part in the last Fruit Growers' Convention at Los Angeles, related a story that has a moral for every California farmer. When he was a very young man he heard of a farmer in western New York who had become very wealthy. In order to find out how this man had done it he made a trip to see him. He was cordially received and shown all over a well managed, well kept farm, but the owner was at a loss to tell him any particular thing that was the secret. One thing happened, however, which Mr. Hale concluded later had much to do with his success. A load of clover hay was seen coming up the road and as it neared the farmyard gate the successful farmer hailed the driver and bought the hay. His wife took occasion to comment thus: "Now, what did you want to buy that hay for? The barn is full now. You seem to think you have to buy all of the hay in the country." Turning to Mr. Hale the farmer said: "Young man, I make it a practice never to sell a load of hay off this farm and I never allow a load to pass by on the road."

Any man in California who has a good alfalfa farm can get rich if he will follow the example of this New York man; if he will feed all the hay he grows to good livestock and buy and feed on his farm all that is offered at a reasonable price. Conservative livestock farming always pays; some other kinds do not merit this statement.

Agricultural Notes

New granges were organized throughout the United States last year to the number of 411.

The timber industry represents 37 per cent of the annual production of wealth in British Columbia.

The several bureaus and divisions of the United States department of agriculture received appropriations from congress amounting to $19,865,832 during the fiscal year ending January 30, 1915.

Those familiar with the eastern mistletoe only have no idea of the great losses due to this parasite in the forests of the west, where it counts next to fire and insects in the amount of damage done.

Of two million sheep annually grazed in the state of Utah, more than a million are on the national forests, or, including lambs which are fattening for market on the forests ranges, over a million and three-quarters.

In parts of the west where trees are scarce, sage brush is used for fuel. In Nevada the large main stems are trimmed by Indians at $3.00 a cord and delivered to the user at about $6.50. Sage brush burns rapidly and is rather dirty, but produces good heat.

A contract has recently been let for the construction of a postoffice tube line in London six and one-half miles long, extending between the eastern district postoffice in Whitechapel and the Paddington district postoffice, and making connections with a number of other postoffices.

The "health exhibit" cars of the Louisiana state board of health are being taken around the country by the railways of the southern states without charge; and the cars have recently visited New Orleans, Richmond, Jacksonville, Atlanta, Macon and a dozen other cities.

In the annual report to congress of the interstate commerce commission the fact is stated that the commission has received 58 applications for release from the requirements of clause forbidding the ownership of water lines by railroads, and investigations of these cases are well under way.

Palm kernels, secured from the oil palm of West Africa, are used in Germany as a source of oil and feeding cake. The oil obtained from them is of a white or pale yellow color and possesses a pleasant taste. It is used for the same purposes as coconut oil, viz., the manufacture of soap and candles, and the preparation of various edible fats. These products are manufactured on a large scale in Germany and exported largely to Great Britain. The meal which is left after the extraction of the oil from the kernels is of value as a cattle food, the whole of which is practically consumed in Germany itself.

The National Labor Exchange has been formed as a result of a conference early this month in Kansas City under the auspices of the United States commission of industrial relation. It is a cooperative organization to act as a clearing house for harvest hands and is to be governed by representatives of the state improvement and agricultural boards of Missouri, Kansas, Oklahoma, Nebraska, North and South Dakota, Iowa, Minnesota, Montana and probably Wyoming. Ultimately it is planned that the organization will be nation wide in scope, to systematize the distribution of farm labor.

Agricultural News Notes of the Pacific Coast

Northern California

The Shasta County dairy industry is increasing rapidly.

The prune crop of northern California is valued at about $2,000,000.

Live Oak, Sutter County, is planning for extensive planting of rice.

Election of officers of the Yolo County farm bureau was held on Tuesday.

Yuba City farmers will plant carob, or St. John's bread, trees to a limited extent.

The growing of broom corn has proven profitable at Los Molinos, Tehama County.

Vacaville is exhibiting Washington Navel oranges weighing a pound and a quarter apiece.

Siskiyou County estimates it will send to San Francisco this year over 700 cars of fat cattle.

Fishermen are finding great sport and some profit in capturing salmon along the Feather River.

The first annual meeting of the Humboldt County farm bureau is to be held at Eureka, January 7.

The Farmers' Protective League is moving for correction of certain weak points in the initiative law.

Grass Valley farmers are bringing in large numbers of stock from the Salt Lake section for fattening.

The northern end of the state claims nearly 50 per cent of all the apples trees planted in California.

Some farmers in Siskiyou County have had good returns from corn, averaging close to 102 bushels to the acre.

Horticultural Commissioner Hecke of Yolo County recently made addresses before farm centers in Placer County.

Thirteen hundred hogs were driven to the Reno (Nevada) market from Alturas, Modoc County, during the past season.

Fruit growers of Sutter County have had difficulty in marketing some fruits during the past season because of over-irrigation.

Yuba and Sutter Counties are uniting in the effort to encourage water transportation on the Feather River for their main products.

The Hayward farm bureau center held a meeting last week and furthered the movement for the organization of a boys' agricultural club in that section.

The United States forest service will unite with supervisors of Trinity County in the building of one of the state's finest highways, costing approximately $1,000,000. An effort will be made to induce Humboldt County to unite in this work and extend the road through to the coast.

The report of the state dairy bureau shows a shrinkage in financial returns to dairymen of California during 1914 over those of 1913. Returns from last year aggregated $33,941,493. For 1913 they were $34,050,552. It appears that Stanislaus County held the honor of first place for a short time, having been passed this year by Imperial County.

Central California

Lindsay shipped 102 cars of oranges in one day.

Stanislaus County is now taking up the matter of growing rice.

Watsonville, Santa Cruz County, is to install a free public market.

Dairymen at Hollister, San Benito County, are greatly increasing their stock.

San Jose is giving especial attention to the manual arts and agricultural departments of its public schools.

The Lodi chamber of commerce has changed its name to Chamber of Commerce of the North San Joaquin.

The Denair center of the Stanislaus farm bureau met last week and counted the names of members, finding 300 listed.

Buyers of Tulare County oranges have been so anxious to secure stock that they have agreed to advance money to shippers.

Canada has received oranges purchased from Tulare County at good prices and has sent hearty commendation for quality of fruit.

Kerman, Fresno County, has a hog ranch where "chemically pure mush-fed hogs" are to be produced. Even the bath water is to be sterilized.

Largely because of successful cooperative dairy and creamery methods in Tulare County the industry has been greatly increased in that section.

Kerman, Fresno County, will hold its annual farmers' institute January 11 and 12. More attention than usual will be paid to poultry in this year's program.

At a recent meeting of directors of the Apple Annual, held in San Francisco last October, it was announced that the deficit on the show will amount to $2000.

The Spreckels Sugar Company is offering to purchase sugar beets on a flat rate of $5.50 per ton. The company hopes to contract for 1200 or 1500 acres in the south San Joaquin section.

During the month of November 482 cows were tested by the Stanislaus County Cow Testing Association. The highest testing cow showed a total for the 30 days of 2463 pounds of milk and 78.6 pounds of butter fat.

A farm bureau center has been established at Bakersfield, Kern County. Meetings will be held the fourth Wednesday of each month. Action was also taken towards the organization of a farmers' exchange at Bakersfield.

A number of ranchers in the section about Terra Bella, in Tulare County, have made experimental plantings of sugar cane. Cuttings were obtained from Glendale, Arizona. The Visalia mill of the San Joaquin Sugar Company will install crushing machinery to care for the cane.

The committee of the California Development Board appointed to consider plans for colonizing Belgian farmers in California has suggested extending the scope of the original idea to include colonizing of Americans who wish to go on the farm. Some serious and thoughtful work is being done in connection with the plan.

Southern California

Heber recently shipped five carloads of fancy long staple cotton.

Thermal, Riverside County, expects to ship 100 cars of onions the coming season.

Large plantings of cantaloupes are planned for next season in the Heber district.

Corona expects a big orange crop this season. It is now estimated at about 1600 cars.

It is rumored that an auto stage line will be established between San Diego and Los Angeles.

Citrus growers have their frost pots and fuel in readiness to light at a moment's notice of frost danger.

The Ventura County farm bureau has established several experimental plots in different sections of the county.

The Los Alamitos Sugar Company gave its annual barbecue to beet growers and employes at Seal Beach on December 15.

A reduction of six to seven dollars per ton in ocean freight rates on lima beans from California to New York by way of the canal has gone into effect.

Between 600 and 700 cars of walnuts have already been shipped from Southern California. About 40 per cent of this amount is from Orange County.

Manager Thorpe of the California Walnut Growers' Association is making a trip through the east and middle west, visiting jobbers who buy California walnuts.

The Northern San Diego County chamber of commerce held its third meeting at Oceanside, December 12. The discussion was principally on water rights of the district represented.

Growers of onions in the Lompoc district of Ventura County are hustling to get their crop out of the ground and on to the market to take advantage of the last week's rise in prices.

Two new steamship lines have recently entered trade between New York and California points. The freight business is so largely increased that lines formerly operating were unable to handle all of it.

To solve the aphis problem of the Imperial Valley it is announced that an entomologist from the state university will come to the valley early in January to study the situation and make recommendations for control of the pest.

The Piru Citrus Association is the newest growers' association in Ventura County. David Felsenthal was elected president of the association, C. S. Johnson, secretary and manager; F. S. Chapman, U. F. Del Valle, A. N. Davidson and John Alcock, directors.

Ventura County has a new board of forestry. The members are: Mrs. L. B. Hogue, first district; F. A. Snyder, second district; E. P. Foster, third district; A. C. Hardison, fourth district; T. A. Rice, fifth district. The board has power to appoint a county forester who will work under salary.

The Coast

Utah has taken steps to reduce the coyote pest.

Inspectors have condemned several shipments of apples made to Ogden, Utah.

Washington has sown a greater wheat crop than ever before in its history.

The Washington agricultural college has just installed a field dairy specialist.

Adams County, Washington, is prosecuting a vigorous rabbit-killing campaign.

The annual state poultry show of Utah will be held at Salt Lake City, January 11-16.

A stock-judging contest for boys was held at Chehalis, Washington, last Thursday.

Utah sugar beet factories have ruled that next year's prices will be the same as last year.

The annual wheat convention of the Washington state college will be held at Pullman, Washington, January 5, 6, 7.

Orchardists met recently at Wenatchee, Washington, and discussed the necessity for lower transportation rates.

The Oregon agricultural college at Corvallis is building a large structure which will be devoted to home economics.

A shipment of 200 heifers made to Bozeman, Montana, from eastern states was released after 17 days in quarantine.

This is the week of the Northwest Live Stock Show at Lewiston, Idaho. Preparations have been made for the greatest ever.

Apple growers of the northwest find the market somewhat improved and many shipments have been made within the last few weeks.

The State Seed Growers' Association, convened at Twin Falls, Idaho, gave one entire day to the discussion of producing better seed potatoes.

Fruit growers of the Northwestern states have received during the past season $1,128,000 as a result of the operations of the North Pacific Fruit Distributors.

Oregon has changed its quarantine regulations so as to harmonize with the national regulations, in that portions of the state may be quarantined instead of the entire state.

At the fruit growers' convention held at Wenatchee, Washington, last week discussion was held as to the advisability of merging many cooperative fruit associations of the Northwest.

Orchardists at Spokane, Washington, have worked up quite an extensive business this year in shipping to exclusive markets exceptionally fine stocks of Rome Beauty apples for the holiday trade.

The annual session of the Oregon Wool Growers' Association was held last week at Pendleton. Officers were elected as follows: President, Fred W. Falconer of Enterprise; vice-president, W. B. Barrett of Heppner; secretary-treasurer, John C. Hoke of Medical Springs.

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Live Stock and Dairy

FEEDING SILAGE

Written for the California Cultivator
By Sacramento Valley Contributor

SILAGE made from Indian corn constitutes a large percent of the silage made and fed in the United States, although alfalfa, clover, soy beans and cow peas are all made into silage. Silage made from clover and these other crops has a strong and very objectionable odor more like decay than the characteristic sour, but not objectionable, odor of good corn silage. Alfalfa, clover, etc., are cut at the same stage as for making hay, and great care must be used in packing the cut or whole hay into the silo. It must be tramped well to prevent moulding. While these legumes can be made into silage it is generally better to make them into hay and grow corn for the silo.

In California first crop alfalfa that is full of foxtail is frequently made into silage because the beards of the foxtail are softened in the fermenting process.

Corn silage contains 26 per cent of dry matter, of which 16.3 per cent is digestible. Of these digestible nutrients 1.4 is protein, 14.2 carbohydrates and .7 fat. Although clover is a legume, when made into silage it contains only 1.5 per cent of protein, about the same as corn silage, 9.2 per cent of carbohydrates, less than corn silage, and .5 per cent of fat. Pasture grass is richer in protein than corn silage, but has a lower carbohydrate content, the percentages being: protein 2.5 per cent and carbohydrates 10.1 per cent.

If it were possible to have it without too great cost, and have it available every day in the year, blue grass pasture is probably the best single feed for cattle, sheep or horses. But on high priced irrigated land it is generally considered that the annual yield per acre is not great enough to warrant growing it—there may be some other reasons. At any rate most stockmen feel that each acre must produce several tons of feed, and alfalfa hay fills that requirement. But animals should always have some succulent feed. Corn silage supplies this and also meets the "many tons per acre" provision.

An animal on pasture grass seldom has digestive troubles and its good condition is indicated by sleek coat, mellow skin and healthy bright pink color of the mucous membrane tissues of the eyes and mouth. The same is true of silage-fed stock. And when they have learned to eat silage animals are as fond of it as of grass. Sometimes a cow will not eat her first feed of silage readily, but in a few days she will probably be eating it in preference to any other feed that may be offered.

A big dairy cow producing a heavy yield of milk can be fed 35 to 40 or even 45 pounds of corn silage per day. She should have in addition all of the alfalfa hay she will eat and 8 or 10 pounds of grain, say rolled barley, beside that. The amount of grain to be fed will of necessity depend upon the individuality of the cow, the period of lactation and the milk yield. No one can tell a cow's needs so well as a good feeder who is with the herd constantly, and no herd can produce to its limit unless it is in charge of a good feeder who studies the needs of the individual animals.

When silage is fed to horses it is important that no mouldy pieces be included, as this will produce indigestion and sometimes death. Horses should be started on a light feed, five or six pounds per day, gradually increasing to as much as 20 pounds in 20 or 30 days—if it is desired to make silage as great a part of the ration as this.

Because of its odor, a sort of sour smell that is very agreeable to a man feeding it after he gets used to it, silage should be fed to dairy cows after milking. If fed immediately before milking the milk will absorb some of the odor. There was a time when milk from silage fed cows was considered second class, but it is difficult to find anyone with this prejudice now.

Next year, 1915, will be a banner one for California, and many good farmers will have occasion to remember it kindly because it was their first silo season; many hundred will be built and filled next fall.

DAIRY STOCK PRICES

Once in a while a man who owns several good dairy cows wishes to sell one of them. He has seen in his farm paper an account of a sale where some dairy cows have sold for as much as $500. He is apt to conclude, without very much evidence, that his cow is just as good as those which sold at that figure, and to demand that much money. When he does not get it, he is angry at first and after that he is incredulous over such prices; he does not believe any such sums are ever paid.

The misapprehension of what the word "pure-bred" means in the market has given rise to much bitterness of spirit. The grade cow may occasionally give as much milk and as rich milk as the pure-bred, but that does not make the grade worth as much as the pure-bred, for there is a second element of value—that of offspring.

A good many people are utterly unable to see why a calf from a pure-bred cow is more valuable intrinsically than the calf of a grade. This is the reason: The pure-bred calf has known ancestors. If its ancestors are all noted for dairy performances, the assumption is that the calf will have the same characteristics. On this the whole system of breeding is erected. The cow whose ancestors are not known may be an extraordinary individual, but some of her ancestors may not have been particularly good and her calves are extremely apt to inherit their characteristics. In other words, the possibilities of the calf of a grade animal are very uncertain and its value is very doubtful. The chances for value in the calf of a pure-bred are very great, for all its ancestors are known, and if the breeding has been done in a scientific manner, the results are reasonably sure.

The worth of a dairy cow is twofold: She has a milk and cream giving value, and she has a calf bearing value. The later is worth more than the former. If one can sell a calf for $150, its dam is surely worth more than if one can get only $50 for the calf. And the calf's value is dependent almost wholly on its pedigree. The calf has not been tested yet; it is an uncertain quality. Nobody can tell with certainty what a calf will amount to. If we know what all its ancestors did, however, the chances are strong in favor of the calf, provided the ancestors did well.

The term "pure-bred" has no other value than that of knowledge of ancestry and assurance of the laws of heredity. The farther away from this knowledge you get and the greater the number of progenitors whose records are unknown, the less sure will be the probabilities of determining the work of a calf.

Sometimes a false value enters into prices in individual cases, and gives an unnatural idea of what prices should be. This may be called the value of sentiment. For example: A man who has means and who likes to gratify his own whims, takes a particular liking to some animal. The animal belongs to a man whose family have made a pet of it. Wife and children are particularly fond of the cow, we will say, because of its appearance or, as is frequently the case, because of its extreme gentleness. The owner does not wish to sell, so he puts a very high price on his pet cow—much higher than the animal is worth, if it comes down to dairy performance. But the buyer is willing to pay for his hobby and does so. The next time a man prices any neighfor's stock, he is apt to hear something like this:

"Well, John Smith over east of here sold a cow for $250 and my cow gives every bit as much butterfat as she ever did, and is younger besides. If his cow was worth $250, mine is worth every cent of $275."

But probably Smith's cow was not worth $250. Probably a fictitious value raised her price by at least $100, for true value must be based on something definite.

This matter of prices deserves sufficient study to get matters clearly before us. Let us understand the basic facts first of all. Age is of importance, because on it depends the length of her usefulness. Breeding is of vital importance, for it furnishes a strong and reliable means for knowing what her offspring will be worth. That breeding must be good, for a mere record of an animal's ancestors is of no value unless it shows favorable facts. The cow's individuality is worth something. Even the best of breeding sometimes fails to produce good results. There are scrub purebreds which have no particular value. A cow's personal records are of great importance, for if her own performances are as good or better than those of her ancestors, the chances are very strong that her progeny will be superior, provided she is properly bred.

While we often hear of the grade that produces more butterfat than the pure-bred, and while we admit that it is sometimes the case, the general rule is that the pure-bred produces more. The first grade cross sometimes brings most desirable results, but after that there is usually deterioration.

For purely dairy purposes, the grade sometimes furnishes satisfactory results, because she is not so heavy an investment. The pure-bred animal, however, if chosen for constitution, for yield and for individual quality is almost invariably a better buy at a higher price. She gives the largest average dairy returns; her progeny is worth much more and she herself is an asset whose value does not fluctuate.—Rural Spirit.

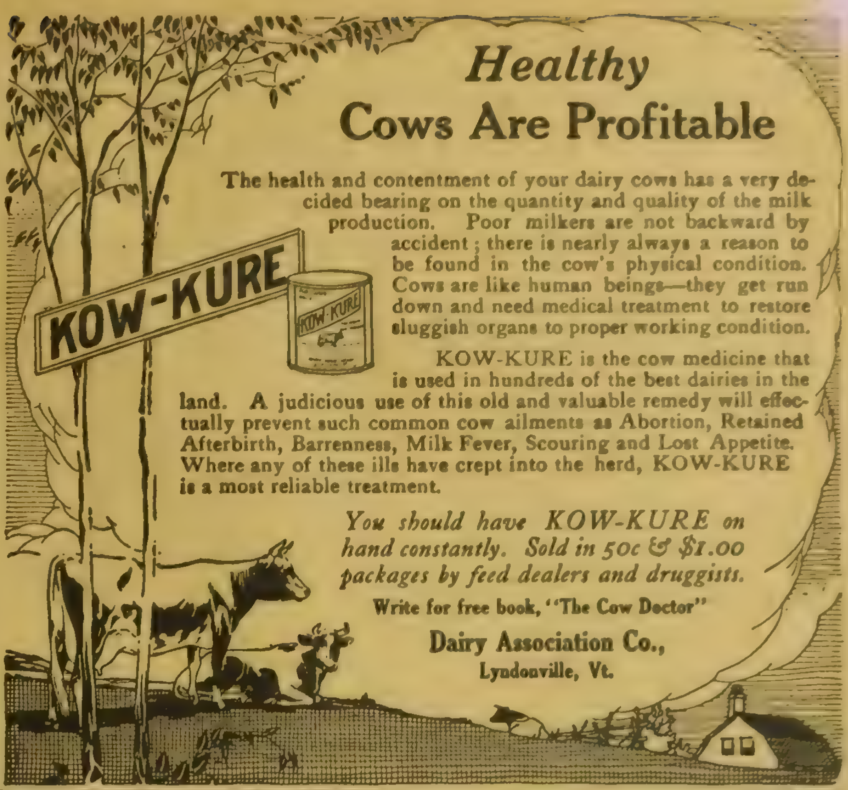
BOT FLY OF THE HORSE

The bot fly is widely spread in the United States. It is the most common internal parasite affecting the horse, states Dr. R. H. Williams, animal husbandman of the University of Arizona Agricultural Experiment Station.

Description.—The adult fly is about the size of a honey bee and covered with short, yellowish hairs. It is present during the summer and late fall months. The fly hovers around the knees, breast, throat and mane of the horses, attaching its eggs to the hair by means of a sticky substance.

Life History.—The eggs are yellowish brown in color and easily noticed on the hair. They develop small hooklets in less than two weeks after they are laid. Horses licking themselves take the eggs into the mouth, where they pass into the stomach, becoming attached to the inner walls. The larvae grow into large fleshy grubs and remain in the stomach for about ten months, after which they pass away with the feces. They soon burrow into the soil and remain therefrom 4 to 6 weeks, when they emerge as adult flies.

Injury.—Horses are much worried by the adult fly, but the larvae do not seem to injure the animal. No doubt some local irritation of the stomach results from the attachment of the larvae to the walls. This may interfere slightly with the normal secretion of the digestive juices. The larvae may also use some of the food nutrients that are absorbed by the stomach walls, and where present in very large numbers the passage of the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INTRODUCED AND ENDORSED BY THE U. S. AGRICULTURAL DEPT. AS NO OTHER GRASS HAS EVER BEEN BEFORE. PRODUCES MORE GRAIN AND BETTER HAY THAN ANY OTHER FORAGE PLANT KNOWN. UNDER ORDINARY CONDITIONS YIELDS 300 to 600 LBS. OF SEED AND 3 TO 6 TONS OF CHOICE HAY TO THE ACRE THE SAME YEAR. GROWS WHEREVER SORGHUM DOES. ALL LIVE STOCK PREFER IT TO ALFALFA. QUALITY OF HAY EQUALS TIMOTHY. SOW IT ANNUALLY WHERE DESIRED IN ROWS OR BROADCAST. ADAPTED TO ALL SORTS OF SOIL. RESISTS DROUGHT. STANDS RAIN. IT TAKES 2 TO 6 LBS. OF SEED TO THE ACRE IN DRILLS AND 10 TO 30 LBS. BROADCAST. LAST SPRING THE SEED SOLD FOR $2 TO $4 PER LB. IT IS NOW SELLING FOR $1 PER LB., AND IS SURE TO GO HIGHER BEFORE SPRING AS THE SUPPLY OF SEED IS LIMITED. WE WILL SEND PREPAID BY PARCEL POST 1 LB. OF GENUINE SUDAN SEED FREE FROM ALL OTHER SEED FOR $1—IN LOTS OF 50 LBS. OR UNDER, NOT LESS THAN 1 LB. CONSIDERED. LARGER LOTS SHIPPED BY FREIGHT CHEAPER PRICE. BETTER ORDER NOW AND BE SURE OF GETTING YOUR SEED AND SAVE MONEY BESIDES. ALL WHO SOW SUDAN GRASS SEED ANOTHER YEAR WILL MAKE BIG MONEY. INSTRUCTIONS HOW TO PLANT WITH ORDER.

ADDRESS

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BOX 15, ALDINE, HARRIS CO., TEXAS.

Grows
South

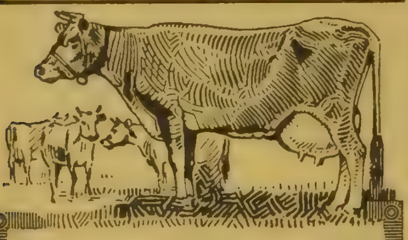
Makes
Money
When
Other
Crops
Fail

Grows
West

Laughs at Drought, Smiles at Rain

food from the stomach may be interfered with.

Treatment.—No known treatment will remove the bot fly after it has gained an entrance to the stomach, without injuring the horse. On this account, prevention by destroying the eggs is the only way to avoid having the animals affected. The eggs may be destroyed by washing the hair with a dilute solution of carbolic acid or by rubbing the parts with kerosene. Clipping will also destroy the eggs. It would be desirable if all the horsemen in any infested district would start a crusade against the bot fly and stamp it out. However, little action has been taken on the part of horse owners, and unless the animals are confined where they can be treated handily it is doubtful if it would pay to try to resist the attacks of this insect.



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is becoming a standard portion of every ration in a rapidly increasing number of dairy herds. Its worth as a succulent, milk-producing, vegetable feed has been fully proven by large and small feeders.

The New World's Champion Cow—Tilly Alcartra

—whose milk record for the past year was over 30,000 lbs. —ate Larrowe's Dried Beet Pulp daily, and to this is attributed a large part of her splendid record.

YOU can increase the supply of milk from your cows at least 1 to 5 lbs. per cow a day by feeding Larrowe's Dried Beet Pulp. It is put up in 100-lb. sacks and can be had either plain or with molasses. Order from your dealer NOW.

FREE BOOKLET—"Profitable Feeding"—giving valuable information and feeding instructions will be sent to any address on request.

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TRADE MARK REG. U.S. PAT. OFF.

Purebred Registered
HOLSTEIN CATTLE

$14,105.50 in prize money was divided amongst 225 breeders of purebred registered Holstein cattle during the year. This is a part of our system of Advanced Registration of milk records. The prizes, 673 in number, range from $40 to $50. Breeders are limited to three prizes in each of our four divisions. Wealthy owners have no advantage over those of limited means. Here is an additional reason for purchasing purebred registered Holstein cattle.

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BUY Guernseys FOR PROFIT

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SILOS AND LIVESTOCK

Written for California Cultivator By Sacramento Valley Contributor

If the cause is right keeping everlastingly at it is sure to bring success. For a good while a number of agencies have been at work seeking to bring about the production of more meat in the Sacramento Valley. This increased meat production could come only as one of the products of a more intense and a more diversified agriculture of which rotation of crops is one part. The production of more feed for livestock is another, and the storage of feed another quite as important. This is where the silo comes in.

It is very gratifying now to ride through the newly subdivided sections of the great valley and see cows and calves and sheep and hogs and chickens everywhere. And it is a source of satisfaction to know that several silos have been built and filled, that many, many more are in prospect for next year, and it will not be long until a prophecy, that some day there will be one or more silos on every small, irrigated, intensely cultivated farm in the Sacramento Valley, will come true. For the interesting and satisfactory thing about the silo situation is that when one is built in a neighborhood, and the result of having a big supply of succulent feed that can be fed with practically no waste is noted by all who have stock, silos spring up like mushrooms.

Some day the world's record for the production of the greatest tonnage of corn from an acre of land will be awarded to some grower in the Sacramento or San Joaquin Valley. The largest yield we know of now was 56 tons of silage corn per acre, grown in Michigan. One yield from the bottom lands on the upper Salinas River of over 40 tons is reported, but we have not begun to grow corn in earnest yet in California. The California Cultivator has been very much interested in an increase in corn acreage, and this will come by leaps and bounds as the number of silos increases.

HOLLAND AND ITS HOLSTEINS

To understand the cattle in Holland we must first look into some of the conditions that exist there, writes Chadwick Gerow in "Holstein-Friesian World." Of course the Province of Friesland is the one in which we are most interested, as that is where the Holstein-Friesian cattle, or Fries, as the Dutch are pleased to call them, originated.

Friesland is one of the eleven small provinces in the Netherlands, and is located in the northern part, bordering on the North Sea.

The soil is of rich clay quality, the sod being so thick and the grass so fine that it feels like a cushion under the feet. They never have to plow their pasture or mowing fields, the hay comes on year after year in overabundance. This land is worth $500 an acre and can scarcely be bought at that. Many times two crops are harvested, one being gathered green, put in a pile and covered with clay. It makes very good silage.

It has been said that if cleanliness was akin to godliness, the Dutch should have the first row reserved for them in Heaven, and indeed it is so. When you approach the door of the barn, the Dutchman removes his large wooden shoes and walks in his stocking feet, while you, awed by this action, carefully wipe your feet on a mat lying outside the door and follow in fear and trembling. When once inside you can readily understand this preliminary procedure—it is as clean as your parlor. When the cows are in for the winter, the floor is scrubbed on hands and knees once each month and swept every day.

Thus it can readily be seen that prevailing conditions point to a steady, natural development of the great Black and White breed. Feeding is thoroughly understood, the animals getting a good balanced ration during the winter, but in summer (from May to November) the cattle are never stabled and consequently are given no grain. Forced feeding has never been emphasized, but some excellent official year-records are made. The seven-day test is not used. In 1897 the present system of official testing was inaugurated and it is conducted upon the same principle as our semi-official test. Once every two weeks a certified milk controller weighs and takes a sample of the milk of each cow for two consecutive milkings. This sample is taken to the local cooperative creámery or butter factory where it is tested for butter fat—the milk is all paid for according to the percentage of butter fat. In addition the farmer gets back gratis 70 per cent of whey and 12 per cent of buttermilk, both of which are used to good advantage in raising calves.

These official records are all filed in the secretary's office, where, at a glance may be seen the production of any cow since first coming to milk. No test is conducted for longer than 330 days, for they maintain that no cow should remain in milk for a longer period. The highest record cow is Schoon Rier II, owned by R. J. Palsma, Lieve Frouwen Parochie. At five years of age she produced 18,796 pounds of milk (916.96 pounds butter). Average per cent fat 3.89, in 328 days. At first glance this is a very ordinary record, but when we consider that she was only milked twice a day, only given ordinary care in winter and did not consume an ounce of grain in summer, it takes on a different aspect. What record would such a cow as that make if handled by some of our experienced testers?

The type represented by Friesian cattle is ever a source of pride, and the Dutch must be complimented on the high standard they have maintained.

Veterinary Queries

Answers in this column by Dr. Wm. Petrie, 2714 South Harvard Blvd., Los Angeles, are without charge. For immediate mail answer remit $1.00. In writing questions give full symptoms or particulars of injury of animal.

Lice

I have a ten year old horse that keeps rubbing his body and tail against the wall and anything that he can reach. He is a good horse and in good condition. When he stands close to another horse they keep nibbling one another. Can you tell me what the trouble is? Subscriber, Arroyo Grande.

Lice are the only thing that will make a horse act as you describe. They will be hard to get rid of at this time of the year when the hair is long unless you clip him. Then apply a solution of zenoleum all over. Use a pint of the zenoleum in four gallons of warm water. Sponge him all over with it and put on a blanket until he is dry. Repeat this treatment once a week for three or four weeks.

Milk Leg—Lymphangitis

I have a young mare that has a swelling just above the hoof which extends almost to the knee. It is soft to the touch and is sensitive. It is worse after she is worked a while and makes her lame. She had a colt in the spring and was lame then. The colt was very thin and weak and only lived a few hours. Otherwise the mare is in good condition. What shall I do for her?—Subscriber, X.

The mare has lymphangitis caused by debility. The same condition caused the weakness in the colt. She will need medicine internally and also to apply to the leg. Have your druggist prepare the following: Nitrate of potash eight ounces, bicarbonate of soda three ounces, powdered gentian three ounces and powdered nux vomica two ounces. Mix and give a tablespoon once a day in the feed. Zinc chloride one ounce and water two quarts. Mix and apply to the leg once a day enough to wet the skin. Warm the lotion and brush the skin well before applying it. Warm the lotion in an earthen or granite dish.

Skin Disease

I have a colt two years old next June that started to skin off. Thinking it might be a skin disease I called a doctor who told me it simply had a damper. The doctor came several times and gave him an injection each time but the colt is getting worse every day. What is best to do for it. —Subscriber, Porterville.

Do not fully understand your question but presume the skin trouble is due to a mite. It may be ringworm. We never heard of a disease called "damper." Have your druggist prepare the following and apply it two or three times a week: Tincture of iodine three ounces, iodine crystals two drams and lard oil enough to make six ounces. Brush the parts clean before applying the ointment.

Paralysis

My pigs lose the use of their hind quarters. I was told that it was kidney worms and to give them turpentine but it does no good. The legs seem swollen and there are lumps just above the hoofs. Was feeding sweet, skim milk when they first became affected but am now feeding skim milk and some kaffir corn. Is there any cure for them?—Subscriber, X.

Rheumatism would affect pigs very much as you describe. They should be kept in a warm, dry place at night and allowed to run out in the sunshine during the day. It is more difficult to cure such troubles in cold, damp weather. Get the following powders and give each one a teaspoon once a day in the feed: Sodium salicylate four ounces, phenacetine one ounce and sodium bicarbonate ten ounces. Mix and give as directed.

Hurt in Breeding

We have a mare that was hurt three years ago when breeding her. When we first noticed her condition she dropped only three or four drops of blood at a time but she is continually getting worse. Each time the blood flows more frequently. She is the mother of eight colts. Has had one every year since being hurt and we believe she is with foal at present. Can you give any advice regarding it? —Subscriber, Arcata.

Probably a good sized blood vessel was ruptured that never closed right. The only remedy would be an operation. If one could reach the parts, touch it with a red hot iron or draw out the blood vessel and ligate it.

Throat Trouble

I have a pig that makes a harsh sound when breathing. It coughs sometimes and also seems to have some difficulty in swallowing. Can you suggest a remedy? Is kreso dip equal to zenoleum?—Subscriber, Fairmead.

The pig probably has something lodged in its throat. A splinter of bone or wood, a small nail or a pin may be causing all the trouble. Being so far down it would be hard to reach. It may work out itself in time. Or it might be a small growth of some kind. Can only say that I have had best results from using zenoleum.

Bees and Their Care

STATE BEEKEEPERS' CONVENTION

FOR the first time in its history the State Beekeepers' Association has gone north of Tehachapi for its president, Prof. Willis Lynch of Salida, but teaching in the public schools of Stockton, is elected president. Vice-presidents are not elected by members of the association but presidents of various county associations are ex-officio vice-presidents of the state association. A. B. Shaffner was re-elected secretary and treasurer. The executive committee, in addition to the president and secretary, who are ex-officio members of the committee, consists of Harry J. Hill, Willows, J. G. Gilstrap, Ceres, and Wm. H. Allen of Santa Paula.

A new permanent committee was created which shall have to do with protecting and looking after the interests of beekeepers who are members of the state association. This committee consists of J. E. Ross, Brawley, W. A. Wiggins, San Bernardino, Harry K. Hill, Willows, and Henry Perkins, Artesia.

San Francisco was chosen as the place of meeting in 1915.

Prof. Willis Lynch, the new president, is also chairman of the committee on exhibits at the Panama-Pacific, and Prof. Lynch, Mr. Gilstrap and others have been working hard on plans for the exhibit. The committee is embarrassed by lack of funds as the association is unable to make any advance to cover the necessary expense. This is unfortunate for of all the honey producing sections of the world California leads and it will be a great misfortune to have the state represented by such an exhibit as must be made if insufficient funds are in the hands of the committee. However, the committee announces that it is willing to do the best it can.

Mr. Gilstrap reported for Prof. Lynch, who was unable to be present, that one of the features of the exhibit was to be specimens of honey plants of California together with extracted and comb honey produced from plants of each variety.

Another feature is to be a historical display of beekeeping appliances, that is, as Mr. Gilstrap expressed it, they would like to show everything, a section of a bee tree with its honey stored as the bees do when they follow their wild instincts; next the straw skep, one of the first forms of hives, used by beekeepers of the old world, followed by other forms of hives up to the Langstroth up-to-date movable frame hive. Of course observation hives with bees making honey are to be a part of the exhibit which shall be in the California building or in the "out apiary," which will also be a feature of the exhibit.

Legislation came in for considerable discussion and the determination was expressed to press through the same bill which was passed by the last state legislature but failed to become a law because of the governor not affixing his signature. However, the situation will be complicated this season because of the effort on the part of many agriculturists to secure the passage of a general agricultural bill to create a board of agriculture or commission of agriculture which shall be supreme over all the various boards or commissions which have to do with agriculture or horticulture.

LECTURES ON GARDENING

The Los Angeles city schools are offering a course of lectures on ornamental gardening, open to the general public, especially to attendants at city schools. These lectures will be in the interest of beautifying city and county roadsides and will be given by Professors Gregg and Stevens of the university. They will extend over the period from November 10 to May 11, The topics covered will range from history and landscape art through to the most practical subjects, such as fertilizers and soil fertility, plant propagation, trees for home and school grounds, lawns and lawn making, etc. Los Angeles County is making a special effort to put itself in ship-shape for visitors during 1915.

Dates for addresses to come are as follows: Fertilizers and Soil Fertility, by Professor Gregg, January 5; Location and Exposure, Professor R. T. Stevens, January 19: Plant Propagation, Professor Gregg, February 2; Trees for Home and School Grounds, Professor Stevens, February 16; Shrubs, Professor Stevens, March 2; Vines, Professor Stevens, March 16; Annuals and Perennials, Professor Stevens, March 30; Pruning and Training Ornamental Plants—Tree Surgery, Professor Gregg, April 13; Lawns and Lawn Making, Professor Gregg, April 27; Insect Enemies and Fungus Diesases, Professor Gregg, May 11.

All the above meetings are to be held in the Polytechnic high school auditorium, Los Angeles.

AGRICULTURE FOR BEGINNERS

Agriculture for Beginners, by Charles William Burkett, editor of the American Agriculturist, assisted by Frank Lincoln Stevens and Daniel Harvey Hill, published by Ginn & Company, Boston, at 80 cents.

This book, with a little companion of 22 pages on How to Teach Agriculture, is worthy of being a constant companion for the public school agricultural teacher. While primarily a text book it should prove of value to everyone who has to deal with soils or with any of the problems connected with agricultural practice.

The colored frontispiece was evidently secured at a time when the frost was on the pumpkin and the fodder in the shock. There is scarcely a page on which there is not some illustration, many of them in colors. The remarkable feature of the book is its price. There is an excellent glossary of several pages, with a complete index. It contains a dozen chapters, touching upon the soil, the soil and the plant, how to raise fruit trees, horticulture, diseases of plants, orchard and garden insects, farm crops, feed stuffs, domestic animals, farm dairying, farm tools and machines and other topics.

OF COURSE JOHNNY KNEW

Teacher—Johnny, can you tell me where Lake Ontario is?

Pupil—Yessum; page 18.—Philadelphia Telegraph.

PLANTING AT THE PANAMA-PACIFIC

Into the 65 acres of living gardens surrounding the Palace of Horticulture there have been set the enormous number of 704,000 golden-flowered plants under the direction of Donald McLaren, the California gardener. These flowers will occupy sunken gardens in the main entrance facing the Tower of Jewels and in the Minor Courts of Palms and Flowers. Work has begun on the final transplanting of 27,000 yellow wall-flowers, and an equal number of Spanish golden iris in the Court of Palms, which looks out upon the Palace of Horticulture. The Tower Plaza has already been planted with 200,000 yellow pansies, 100,000 yellow daffodils and 100,000 golden poppies. In the Court of Flowers, which opens toward Festival Hall, 250,000 golden poppies, 100,000 daffodils and 50,000 golden tulips will be set.

So that the 65 acres of flowers and plants will be kept constantly in bloom during the ten months of the exposition, it is planned to replace this first setting with other flowers when the first cycle has lived its life. Mr. McLaren believes that three plantings will be required to keep the vast gardens ever in bloom. An unusual decision was made by Mr. McLaren this week to plant no palms in the Court of Palms, the space being given over to acacias, towering Italian cypresses and low-growing eugenias. The balustrade surrounding the pool will be overhung by low-trailing muehlenbeckia, or maidenhair vines.

The exposition's horticultural gardens became international in scope this week when entries of roses from Belgium and Holland were planted in the rose gardens. These are government exhibits of these two countries and are entered in the competitions, one of which has a prize of $1,000 for a new unnamed rose.

TOLD AT THE CARD TABLE

"A little girl sitting next to me at church was coughing," said Mrs. Jones at the card club. "So I whispered to her mother for permission to slip her a cough drop. The child held it in her mouth a moment and then swallowed it.

"'Would you kindly give her another?' the mother whispered.

"'I'm sorry, but I only had the one,' I answered.

"Coming out of church I felt in my pocket and was horrified to fish out the cough drop. You see, I had had a cough drop and a button in my pocket."

"And what did you do?" chorused the women at the table. "Did you tell her mother?"

"No, I didn't. I was mad. It was the very unusual button from my new suit."

BEST SHE COULD DO

One day a little neighbor four years old was found swinging her cat by the tail. The kitten, of course, was mewing pitifully, but the little girl said, "No use crying, pussy; tan't swing you any faster."

WOMEN'S CAPES

Cape of Good Hope—Sweet Sixteen.
Cape Flattery—Twenty.
Cape Lookout—Twenty-five.
Cape Fear—Thirty.
Cape Farewell—Forty.
—Ladies' Home Journal.

SAXON

For service on the rough country roads, the NEW SAXON CAR has proved its remarkable stability. Its short wheel base making it possible to dodge the holes, and its splendid spring suspension makes "hitting the bump" only a trifle.

Sid Boerstler, of Brawley, drives his car back and forth to Los Angeles, and says he enjoys every foot of the way. He declares it ideal for desert work, as it will not overheat.

To maintain the NEW SAXON costs only a few pennies. It was driven from Tiffin, Ohio, to Los Angeles at a cost for supplies of only $38.70. Ever hear the equal of that feat?

The price—$460. Electrically equipped, $530.

A full announcement of the Six Cylinder 5 Passenger Car will follow soon.

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BEES Beekeeping pays big on the farm or on a small city lot. Raise your own honey and make considerable profit besides. Your profit will be often $15.00 per colony or more a year. Write for our free instruction book and price list of bees and supplies. We ship anywhere by express. BEES

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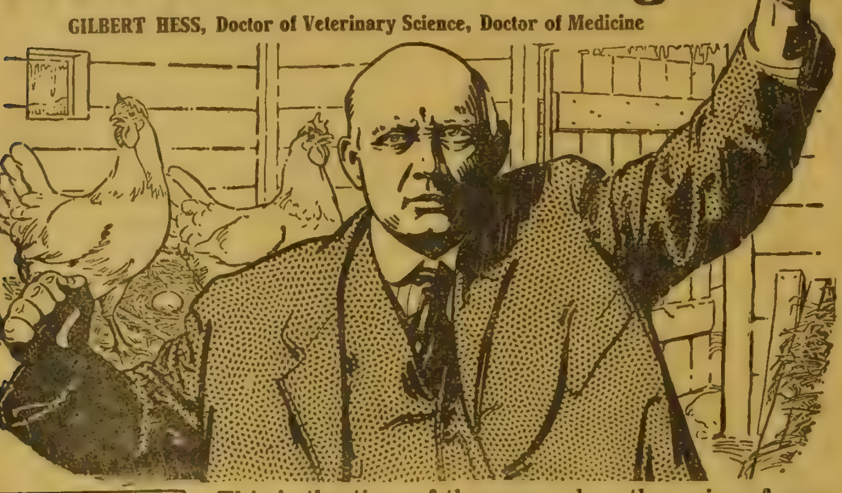


Get the Eggs NOW While Prices are High

GILBERT HESS, Doctor of Veterinary Science, Doctor of Medicine

This is the time of the year when the price of eggs is high and your hens ought to be making up for the small egg crop during moulting.

But hens need a tonic during the winter months, because the lack of exercise and green stuff, and also close confinement, impairs the digestion, makes the system sluggish and the egg organs dormant. With the knowledge I have gained in a lifetime experience as a veterinarian, doctor of medicine and successful poultry raiser, I have succeeded in compounding a scientific preparation that will make poultry healthy, make hens lay and keep the egg organs vigorous and active.

Dr. Hess Poultry PAN-A-CE-A

contains ingredients for toning up the digestive system and enriching the blood. It also contains tonics for toning up the dormant egg organs and making hens lay, internal antiseptics for preventing and remedying gapes and other ailments, also bone and shell forming ingredients. Every single ingredient in my Pan-a-ce-a (printed on every package) bears the recommendation of the U. S. Dispensatory and other high authorities. Now read this carefully:

☞ **So sure am I that Dr. Hess Poultry Pan-a-ce-a will make your poultry healthy and make your hens lay that I have authorized my dealer in your town to supply you with enough for your flock, and if it does not do as I claim, return the empty packages and get your money back. Buy now on that guarantee.** ☜

Sold only by reputable dealers whom you know, never by peddlers. West of Rockies: 1½ lbs. 25c; 3 lbs. 50c; 7 lbs. $1.00; 25-lb. pail $3.00. Pan-a-ce-a costs only 1c per day for 30 fowl.

My new poultry book tells all about Pan-a-ce-a. It's free.

DR. HESS & CLARK, Ashland, Ohio

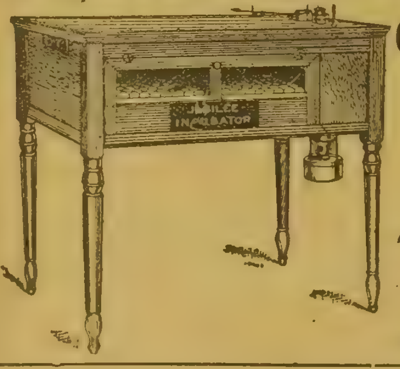
Dr. Hess Stock Tonic

Your cows, horses and hogs are pretty apt to get out of fix during winter, because grain, hay and fodder do not contain the natural laxatives and tonics so abundantly supplied in grass. Lack of exercise is another thing that retards good health.

Dr. Hess Stock Tonic contains tonics that improve the appetite and tone up the digestion, laxatives for regulating the bowels, and vermifuges that will positively expel worms. I guarantee it. West of Rockies: 25-lb. pail $2.25; 100-lb. sack $7.00. Smaller packages in proportion.

Dr. Hess Instant Louse Killer

Kills lice on poultry and all farm stock. Dust the hens and chicks with it, sprinkle it on the roosts, in the cracks, or if kept in the dust bath, the hens will distribute it. Also destroys bugs on cucumber, squash and melon vines, cabbage worms, etc., slugs on rose bushes, etc. Comes in handy sifting-top cans. West of Rockies: 1 lb. 25c; 3 lbs. 60c. I guarantee it.



Going to Hatch Chickens?

How are you going to supply the demand for chicks and eggs for 1915? You cannot make a success unless you use a

JUBILEE

Ask the poultryman who has one.

Send for Catalog J.

JUBILEE INCUBATOR CO.

Sunnyvale, - - - - - California

AGENTS

Jubilee Incubators and Brooders

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Baby Chicks: Standard Bred; The best to be had are shipped by us every week in the year. Also Petaluma's best utility stock. Price-list and pamphlet mailed free upon request.

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BABY CHICKS and EGGS

We will book your order for Chicks or Eggs for future delivery.
WHITE LEGHORNS, BLACK MONORCAS AND R. I. REDS OUR SPECIALTY.
Our Chicks are hatched in the
BEST VENTILATED HATCHERY IN CALIFORNIA.
INSTRUCTIONS HOW TO RAISE CHICKS FREE.

Hicks Jubilee Hatchery, Route 2, Box 22, Petaluma, California

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Poultry for Profit

LESSONS FROM NATIONAL EGG-LAYING CONTEST

ALL previous records have been broken in the National Egg Laying Contest which closed December 1 at the Missouri state poultry experiment station at Mountain Grove. Lady Laymore, hen No. 611, a S. C. White Leghorn from Nebraska, tied the world's trapnest record for an egg laying contest. She laid 286 eggs in 12 months. She beat Lady Showyou's record by five eggs. The English pen of S. C. White Leghorns won the grand championship by laying 2297 eggs. Every one of the hens in this pen except one laid over 200 eggs.

Why is it that some pens have a single hen in the pen of ten hens that will make a very high record and the remaining birds in the pen will be below the average? We think it is due to the fact that a poultryman like Barron has given much thought and much time to the question of selection and breeding for egg production. Such breeders have done some trapnesting, some pedigreeing, and they know the kind of males and females they are breeding from. Such poultrymen have selected and bred from 200-egg males, that is, males bred from hens with 200-egg records, so long that they have fixed the egg laying characteristics and the egg-laying ability in the entire flock, so nearly so that practically all their hens average well and make good records, barring sickness, accident, or improper methods of feeding and housing, while the other fellows have bred more or less promiscuously and unknowingly. Therefore they only get an occasional high hen. A good fancier might see an exceptionally beautiful bird exhibited by an amateur, but not knowing whether the bird had a line of good breeding back of him, a good fancier would not give much for such a bird to cross on his flock because the birds good points might not be fixed by years of breeding and he might not be able to transmit his good qualities. The same is true in breeding for egg production. In some pens practically every bird gives evidence of years of careful selection and breeding and another pen has only an occasional good bird which shows that these good qualities are not so firmly and uniformly fixed in the flock. Mr. Poultryman, know the history and the pedigree of at least a few of your best breeding males. It pays.

In addition to the above facts our records for this contest and the two previous ones lead us to state the following as being true:

There is an egg type and a beef type in poultry just as truly as there is a dairy type and a beef type in cattle. We find both of these types in all varieties of poultry. And there is also the intermediate, or dual purpose type. We are not going to attempt to describe these except to say that our best hens are medium sized birds, and as a rule, are considerably under standard weight. They are late moulters and practically free from the disposition to broodiness. They have thin pelvic bones, rather high tails, rather narrow skulls, not a masculine head in appearance, large, bright eyes, large combs, long and broad backs carried much higher than that portion nearest the tail; wide behind with plenty of space between the point of their breast bone and the points of pelvic bones, and they must be good feeders, always active and alert. The good laying hens are nearly always somewhat close feathered. We believe that if a White Leghorn with a record of 250 eggs and a Barred Rock with the same record, were both in good health and condition, and were both killed and picked at the same time, you would find a great resemblance and uniformity in the shape and measurements of the body and bones of the two fowls. You would have to make due allowance for the extra size of the Plymouth Rock, of course.

These contests have also proven beyond a doubt in my mind that a reasonable amount of beauty and a reasonable amount of eggs can be combined in the same fowl. The Barred Rock, the White Rock, the Buff Leghorn and a number of the other hens which made the highest records this year, were hens which would not disgrace any show room. The Barred Rock which laid 254 eggs was exceptionally good in color and shape. Just as have some of the fanciers utterly disregarded egg production in their matings, just so have some of the egg men utterly disregarded color in their matings. We do not believe it is possible to produce a record breaking layer and pay too much attention to color, neither can you breed the exceptionally high scoring specimen and pay too much attention to egg production, but we do believe it is possible to breed whole flocks that can average 150 to 180 eggs and have individuals laying from 200 to 250 eggs and still have beautiful color and shape, which is not necessarily standard shape. There seemed to be a disposition at the last A. P. A. meeting at Chicago to gradually change the shape of our varieties until they conform more nearly to the egg type, and that is what we should come to. Also the egg men should strive to improve the color in their flocks, and the standard makers should always bear in mind not to make the color requirements so artificially impossible that a good poultryman could not combine a reasonable amount of beauty in shape and color, and at the same time have a productive flock. We are glad to say that the disposition of the standard makers seems to be in that direction more than ever before.

The highest pens from the different countries ranked as follows at the close of the contest: Pen 0, S. C. W. Leghorns, best English records, 2296 eggs; pen 65, S. C. W. Leghorns, best American records, 2104 eggs; pen 102, S. C. W. Leghorns, best New Zealand records, 1814 eggs; pen 77, S. C. W. Leghorns, best Vancouver Island records, 1774 eggs; pen 3, S. C. W. Leghorns, best Australian records, 1660 eggs; pen

21, White Wyandottes, best Ontario record, 1641 eggs; pen 64, S. C. W. Leghorns, best British Columbia record, 1460 eggs; pen 76, S. C. W. Leghorns, best S. African record, 1352 eggs.

Our experience with foreign pens leads us to believe that on account of the change of season, change of climate and long distances that it is almost impossible to ship birds from Australia and New Zealand and other countries of equal distance and then get satisfactory results. We believe we can breed from these pens one year at this place and raise their young in this climate and they will do far better than their parents. Many of these did quite well, however, considering the fact that they were just about frying size when they reached here last December.

In this contest, which just closed, 115 hens laid more than 200 eggs each. The highest of these hens of each variety is as follows:

Pen No. 611, S. C. White Leghorn, Nebraska, 286 eggs; pen No. 180, White Wyandotte, Pennsylvania, 265 eggs; pen No. 566, Barred Plymouth Rock, Iowa, 254 eggs; pen No. 24, Ancona, Missouri, 243 eggs; pen No. 335, Black Orpington, Nebraska, 243 eggs; pen No. 576, White Plymouth Rock, Texas, 242 eggs; pen No. 456, R. C. Rhode Island Red, Missouri, 239 eggs; pen No. 236, Silver Wyandotte, Missouri, 233 eggs; pen No. 363, Buff Orpington, Texas, 230 eggs; pen No. 476, S. C. Rhode Island Red, Missouri, 227 eggs; pen No. 48, S. C. Black Minorca, Missouri, 225 eggs; pen No. 197, Buff Wyandotte, New York, 222 eggs; pen No. 13, Campine, New Jersey, 216 eggs; pen No. 42, S. C. Buff Leghorn, Michigan, 215 eggs; pen No. 278, Black Langshan, Missouri, 215 eggs; pen No. 524, Buff Plymouth Rock, Missouri, 210 eggs; pen No. 895, White Orpington, Missouri, 205 eggs; pen No. 141, Black Rhinelander, California, 202 eggs.

The hens in the National contest made an average of 159 eggs per hen. There were several hens which did not lay an egg. These will be killed and examind, to determine, if possible, what was the cause of their barrenness. The average would have been at least from five to eight eggs more per hen had the contest started the first of November, 1913.

DO OLD HENS PAY?

How many years shall we keep a hen? This question comes up frequently for discussion, and the answers made by practical poultrymen are bewildering to a beginner. One man says that we should depend upon pullets entirely for laying stock. His scheme will be to keep the hens through their first laying season, then select the best of them for breeders and let the rest go. This plan is based on the general theory that a hen lays more eggs in her first year than in any other. Many poultrymen seem to believe that most of their hens cannot come back and give a profitable egg record the second year. The system based on this theory demands, of course, a vast amount of work in hatching and brooding, in order to keep up a full supply of pullets each year. On the other hand there are poultrymen who say that we may well keep our hens two, three, or even four years, provided we have the ability to judge the layers properly or have some system of weeding out the drones. Naturally if we could keep our hens three years it would mean less work at hatching and brooding.

Does anybody know about this?

Bulletin 135 of the Utah experiment station gives the results of a study in annual egg production. This is based on the records of a flock of seven-year-old hens and their progeny, and figures given are very interesting. For example, a White Leghorn hen in her pullet year laid 103 eggs. Under the usual system of judging layers, this hen would have been discarded as a drone, but the next year she came back with 197 and repeated with 108. In her fourth year she fell down to 72, yet in her sixth year she laid as many as she had when a pullet. It is a question whether it paid to keep this hen after her third year, but such records are necessary in order to learn definitely about such things.

The cost of renewing the flock is considered one of the greatest drawbacks to the poultry industry, the authors estimating the cost of a pullet—probably up to laying age—at from 50 to 60 cents. The average productive life of hens cannot be estimated at this stage of their work, but for the strain used in their studies was thought to be about four years. The range of individual egg production in their flocks was found to be from 100 to 160 in the first year, from 105 to 140 in the second year and from 100 to 130 in the third year. After the third year the production remained fairly constant at about 90, with a variation of not more than 10 or 15 eggs per year.

THE BOURBON RED TURKEY

Written for California Cultivator

By Mrs. N. S. Ferris, State Vice President N. B. R. T. Club.

MR. J. F. BARBER, of Monticello, Arkansas, claims to have bred these turkeys for 25 years. He at first advertised them under the name of Bourbon Butternuts, but later changed the name to Bourbon Reds; Bourbon after his native county in Kentucky and Red because of their color. The original stock was the little common yellow turkey of the Alleghenys. Each year he selected the largest and best marked ones, that is, those with the darkest plumage and the whitest wings and tails. Occasionally he would throw in a cross with the Bronze to increase size. This may, I think, account for the barring across some of the feathers which seems almost always to be found in the toms and occasionally in the females.

The standard as adopted by the American Poultry Association calls for a dark, even chestnut red body, clear white primary and secondary wing, and white tail. Weights, adult cock 30 pounds; yearling cock, 25 pounds; cockerel, 20 pounds; hen, 18 pounds; pullet, 12 pounds.

There is a very much alive National Bourbon Red Turkey Club, a member of the American Poultry association, which has for its object the advancement of the breed along standard lines. It is working for a bigger turkey, a redder turkey and one with clear, white wings and tail. While the weight standard is exceedingly high for the breed, and is hard to reach, as is the case in all varieties of turkeys, the color is fast becoming better. I have received several hens from eastern breeders that have the entire tail white, one of them having the body feathers as dark as those of the male bird, though according to the club's standard the female may be a shade lighter than the male. Some leading eastern breeders advertise 40-pound toms with the dark even body and the all white tail, but these birds are the exception in the breed, and those who have birds of good shape and size, of even dark body color and with tail three-fourths clear white may consider that they have excellent stock. A few more years of careful selective breeding will make a huge difference in these points.

Contrary to a statement recently made, the Bourbon breeds remarkably true. Many times they come with much more white in tail than either of the parents, due undoubtedly to good blood back of the mated individuals. As in all pure breeds of poultry there are sometimes culls. Occasionally a hen will come much too light in body color. This, I expect, is a throwback toward the yellow turkey and the bird should not be bred. Rusty wings are still occasionally seen and sometimes a light spot or "bib" on the neck, which usually disappears with the first moult.

This breed of turkeys is remarkable for its beauty. The toms have a distinct, narrow black band across the ends of the body feathers, while in the female the body feathers have frosted edgings. To my mind a strutting Bourbon tom with his glistening chestnut red body and wide spread white tail is second in attractiveness only to the many hued peacock.

The utility qualities of the breed are fully equal to its unsurpassed beauty. In common with the White Holland they mature earlier than the Bronze. Like all early maturing varieties, they have small bones, rather short legs and round, plump bodies. As they make bone they also make flesh, and it is a poor specimen indeed that must be kept over until Christmas to be in proper marketable condition. This makes a desirable saving to the breeder as well as to the careful housewife who much prefers to pay for meat and little bone. The size, intermediate between that of the White Holland and the Bronze, makes it a very desirable bird for the average family, which nowadays often eats Thanksgiving chicken rather than pay for the very large and expensive turkey. The hens are excellent layers. This last season my yearling hens laid from February until they moulted in October, some laying over six and seven dozen eggs in the season. They lay in places most convenient for the caretaker, in the chicken houses, in the barn, one even insisting on trying to get into a trap nest.

Those interested in this most useful breed, who would be glad of more information than I can give, I refer to Mrs. Minnie M. B. Brown, Appleton City, Missouri, secretary-treasurer of the National Bourbon Red Turkey Club, who has at her command bulletins and other literature on the subject.

Many breeds have been considered most desirable until something better came. The Bourbons are now making a remarkable gain in popularity and "there is a reason."

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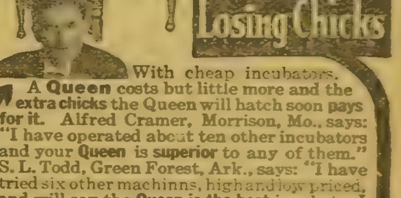
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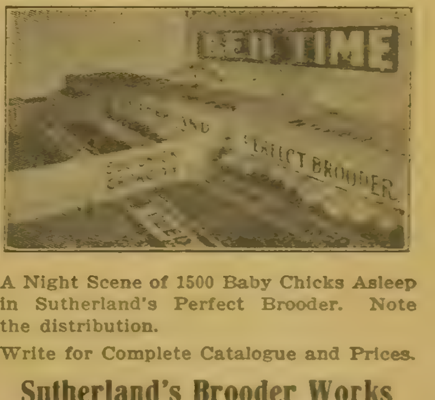

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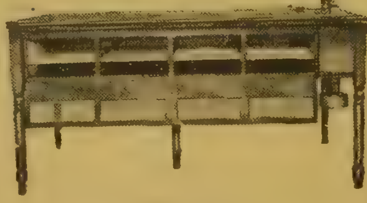

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flock as soon as the hatching season is over, so as to produce infertile eggs.

Infertile eggs are produced by hens having no male birds with them.

Infertile eggs keep much better than those that are fertile.

The male bird has no influence on the number of eggs laid.

The hen's greatest profit-producing period is the first and second years.

February and March are the best hatching months. Chicks hatched during these months are freer from sore head than those hatched later.

Do not allow sitting hens to remain in the hen house. By so doing many eggs are started to incubate, which renders them unfit for use at home or to market.

If possible place the brood coops near the cornfield, which furnishes both shade and fresh ground.

The free use of kerosene or crude petroleum on the roosts, dropping boards, in the cracks, and around the nests will exterminate mites. White wash is also good.

Spray the brood coops once a week with some of these solutions and move to fresh ground.

Be sure and feed the table scraps to the fowls. Milk is one of the best feeds for egg production.

THE POULTRYMAN'S OPPORTUNITY

There is no reason for good poultrymen to be alarmed because of the present situation which we are facing on account of the European wars or the high price of feeds. The man who has a good laying strain of pure bred poultry is going to get enough eggs this winter to pay his feed and labor bills and net him a nice profit. Neither will the man who has a good strain of pure bred exhibition poultry suffer, because good breeding stock and eggs in 1915 are going to be scarce and high. We believe that eggs will likely be higher this winter than ever before. So the good poultryman need not be alarmed. On the other hand we believe this is really the poultryman's opportunity. But the fellow who will suffer most is the man who has scrub poultry that has neither been bred for eggs nor exhibition.

When times get hard or the price of other food products advance, then it is, as is shown by the past history of the industry, that people turn more to poultry raising than before. Thousands of shop men, clerks, mechanics, and laboring men in cities and small towns then turn to poultry as a side line to help pay the "high cost of living." It is certain to be so again. However, because of this uneasiness, there is great danger of many fine flocks, which it has taken years to

(Continued on Page 671.)

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Softland trees, perfect in quality, grown by us. Lowest price. Will plant if desired. Consider some exchange—now is most favorable time to make contract for next spring planting. Write or phone today for prices. Phone 559. Ward Realty Co., San Dimas, Cal.

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Grafted Walnut Trees on Northern California Black Root. Special price, must be moved. Placentia Perfection, Chase, Eureka, Mayette, El Monte Large, etc. Both phones 6971. Whittier Nursery, 803 West Philadelphia St., Whittier, Cal.

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Macfarland Strain White Leghorn eggs $5 per 100, chicks, Jan., Feb., $12, afterward $10, order now, any quantity. Cockerels $2. White Rock eggs, chicks, cockerels; write for prices. Big plant, best stock, lowest prices. Newton Poultry Farm, Dept. 3, Los Gatos, Cal. N. B.—See article about us by Prof. Adams, U. C., in October Poultrycraft.

White Leghorn baby chicks from McFarland Strain, from two years old hens; there is no better laying strain than this. You cannot succeed in the poultry business with poor stock. I guarantee safe arrival by express. My specialty is pleasing my customers. Chicks $10.00 per 100. Book your order for Spring delivery now. $2.00 per hundred with the order. J. W. Lyon, Gardena, Los Angeles Co., Cal.

S. C. White Leghorn Baby Chicks—From my pure-bred flocks S. C. White Leghorns, carefully selected for laying and Standard qualities, $9.00 per 100, $85.00 per 1000. A first class chick at a reasonable price. Eggs for hatching, $5.00 per 100, $45.00 per 1000. Correspondence solicited. J. R. Heinrich Poultry Yards, Arroyo Grande, Cal.

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APPLE CULTURE

(Continued from Page 647.)

buds from the base upward. Planting such a specimen makes it possible to start the head of the tree correctly, and to give one complete control during subsequent training.

Systems of Planting

The common systems of planting are the rectangular (trees planted in rectangles or squares); quincunx (planted in fives—rectangles or squares with a tree in the center of each) and the hexagonal (trees in groups of seven, six in a circle with one at the center of the circle). The rectangular is the most commonly used. This system permits of intercropping and the greatest ease in caring for the orchard. The quincunx is the ideal system for planting with fillers. The fillers may be removed later, and the trees then stand in rectangles or squares. The hexagonal system gives good spacing, all trees being equal distances apart in all directions, consequently equally exposed to light and other conditions. Small varieties whose top development is slow, require about twenty-five feet of space. Rank growing varieties may need as much as forty-five feet of space. Twenty-eight to thirty-six feet are good averages.

Planting

The size of hole for planting the tree depends upon the nature of the soil. The more compact the soil, the greater should be the diameter of the hole up to thirty inches. Soil should be removed to a depth of fifteen to eighteen inches.

Previous to, or at the time of setting, all trees should be examined very carefully to detect all diseased or otherwise infected ones, so that they may be discarded. The roots should be trimmed, in order to remove all broken and mutilated portions of branches and thin out the thicker ones, providing good space for the remainder. Shovel loose soil into the bottom of the hole, preferably top soil; place the tree in this loose soil with the roots spreading out in their natural position; work the dirt under the crown and around the branches with the fingers, being sure that the soil comes in contact with every root, and all spaces are filled, excluding the air. After the roots have been covered to a depth of two to three inches, soil may be packed by trampling with the feet. The upper three or four inches of soil should be left loose, in order to form a mulch that will conserve the moisture. When the tree is set, it should stand erect, and two to three inches deeper than it stood in the nursery row. Immediately following setting, cut off the top about thirty inches above the ground. This cut should be slanting, and about one-quarter of an inch above the bud.

Training the tree

During the first growing season remove or arrest the growth of all the branches that will not be needed in building the framework of the tree. Three to five scaffold branches should be saved. All growth below the lowermost scaffold branch should be rubbed off as soon as it starts. Should the growth be very vigorous, which is apt to occur in the warmer sections, the scaffold branches may be cut back during the middle of the summer, so as to induce them to rebranch and make a growth that will mature before the advent of winter weather. In cutting back the scaffold branches during the summer, enough of each branch must be removed to induce laterals to form at the points where the scaffold branches should be forked.

Training during the second season consists in removing a few cross limbs, and shortening the branches, which work may be done either during the winter or summer, or both, depending upon the rate of growth. Training must be done frequently enough to insure a proper framework, yet at the same time, moderately, so as not to interfere with the development of proper fruiting habits.

General field practice has shown that the open or vase-shaped top permits of the greatest ease in cultivating, pruning, spraying, thinning and picking the fruit. Red varieties of fruit color best when exposed to the light. The tops of such varieties, therefore, should be open. The tops of the yellow varieties may be allowed to develop more brush within the interior, since the fruit develops perfectly with less exposure.

Pruning

When grown under the most favorable conditions, the apple tree requires very little pruning. The training of the tree secures the desired framework and shape. Where there is a tendency for the tree to begin bearing at an early age, and overbear thereafter, with a tendency to accelerate wood growth, winter pruning is generally practiced. Conversely, if there is a rank growth of top, and the tree is prone to produce fruit, the habits of the plant may be corrected by pruning during the summer. A serviceable method for determining this time is to note the development of the terminal pair of leaves on the young wood. Pruning should be done at the time these leaves are turning from light to dark green. The parts and amounts of the trees to be removed must be determined by the pruner, since each individual of a variety, as well as each variety, presents very different problems, even grown under the same conditions.

Bracing Trees

During the bearing period, it not infrequently happens that a tree produces more fruit than it can carry without additional support. In all cases where injury to a tree is apt to occur, additional support should be given it, in order to relieve the strain. Weak crotches may be strengthened by putting bolts through the branches above them, and wires extended to the upper portions of the tree. The same object may be accomplished by placing props from the ground at needed points, or by carrying the weight of a branch on a rope from a temporary mast, set alongside, and tied to the trunk of the tree.

Cultivation

Cultivation in the young orchard should be continuous until the trees come into bearing. During the years preceding fruiting, it is necessary to promote the growth of the plant by giving it a uniform supply of food, which results are best accomplished through clean cultivation.

Irrigation

The apple tree requires a constant supply of moisture during the growing season. Either with natural rainfall or irrigation, an over-supply of moisture, alternating with periods of great deficiency, damages the plants severely. Under irrigation, the time for applying the water can best be determined by testing the soil with an auger, noting the moisture conditions to a depth of four to six feet. Applications of water should be made at intervals frequent enough to keep the soil constantly moist. During the application the amount should be of sufficient volume to wet the soil to a good depth, after which time water should be withheld until a subsequent irrigation is necessary.

Intercropping

During the period that it takes to bring the orchard into bearing, the utilization of the ground lying outside of the area occupied by roots of the tree is desirable. Unless the fertility of the soil is utilized, much of the unused portion will be lost. Garden truck, small fruits, bush fruits or any other hoed or cultivated crops may be grown, provided the care given the ground occupied by the intercrop does not interfere with the proper growth and development of the trees. It is quite possible to produce crops between the rows that will pay all or the greater part of the running expenses of the orchard. During intercropping, one should bear in mind that trees will occupy a space three to four feet outside the spread of the top; therefore the intercrops should be planted beyond this area.

Pests and Diseases

A large number of diseases of the fruit and tree are controlled through the proper use of fungicides and insecticides, or a combination of them. The intelligent and successful control of an organism causing injuries to the orchard requires a good knowledge of the life cycle of the organism, the orchard practice required to control or eradicate it, and proper spraying methods.

Most fungi causing diseases of the apple tree and fruit are internal parasites, only controllable by removing and burning the diseased portions, or by applying substances to the surface as protective coats. Bordeaux mixture, lime and sulphur, and atomic sulphur are the leading fungicides.

Insects are of two general types, classified by feeding habits. Insects that chew and swallow their food may be poisoned by coating the food plants with some stomach poison, such as arsenate of lead, or arsenite of zinc. Insects that suck the juices from plants cannot be poisoned but fortunately they have soft walled bodies, and are usually exposed, making it possible to kill them by coating the body

(Continued on Page 671.)

A Tip on Almonds

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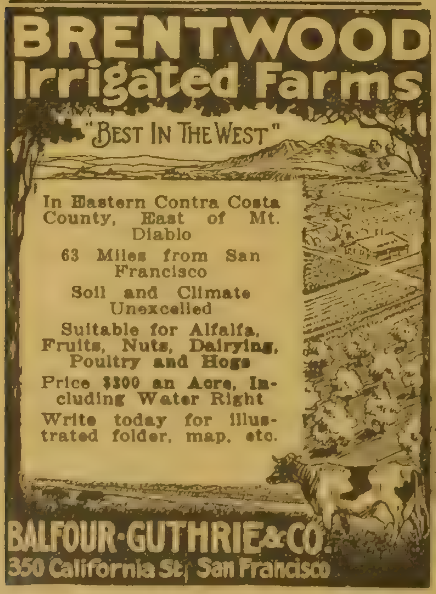

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IRRIGATION PRACTICE

(Continued from Page 649.)

I have never seen so great a change in the character and mechanical condition of soil in so short a time as there has been in this orange grove, and while it is not like loose, mellow, sandy loam yet, it absorbs moisture many times more readily than before and is a far more pleasant and tractable soil to irrigate and cultivate than before. And that this treatment has been proper is conclusively shown in the increased vigor and growth of the trees and in the crops they have produced.

During the season of 1913 it was found difficult to get moisture to penetrate more than nine or 12 inches in some heavy land on which there was young seeding of alfalfa. Water was delivered in a head of five cubic feet per second and it was ordinarily divided into three or five checks. The checks are 25, 40 or 50 feet wide and 660 feet long. By dividing the head into 10 or 15 checks and letting it run for a longer time, then turning it off these checks, irrigating some more, and then irrigating these a second time before they dried out, it was possible to get a penetration of 24 to 48 inches.

So much in a general way for the object of irrigation, the importance of studying the individual case, the need of constant observation of changing conditions and the application of common "horse sense" and judgment to the problems presented.

After a prospective irrigation farmer has selected a location the next step is the

Preparation of the Land

Unless the owner of the land or the man who is to do the leveling is very familiar with this kind of work, it will pay to get a reliable, experienced engineer to lay out the place. By experienced I mean one who has had experience in the particular locality and under similar conditions to those prevailing on the place to be improved. In this way it is possible to benefit by the mistakes that have been previously made in handling the soil, water, etc., in the district in question.

Even if the owner is experienced a map of the place, with the proposed present development and all future development, should be made showing the approximate location of drains, ditches, checks, or borders, boxes, etc.

During the early days of the development of the Sacramento Valley Irrigation project these farm plans were made by company engineers for all settlers who made application for them, and blue prints were furnished. The engineer first discussed with the purchaser his general plans for developing his place, found out about where he wanted to build; how much alfalfa he wanted and how much orchard. He then laid out the drains and ditches in the most convenient places for operation and where they could be built most cheaply. Some changes have been made in these plans by the settlers as they have developed their places, but in the main they have been followed, and even though only a small part of the place may be developed during the first or second year, such work as is done is not wasted and will not have to be done over again to fit into future plans, as has often been the experience on farms developed in a haphazard way.

There seem to be many places where a prospective irrigation farmer can spend money for the counsel and advice and service of men experienced in the details of the business with the assurance that if he gets the right men and the right service it will be money very well spent. In fact $100 spent for advice could easily save $1000 in real, absolute value in the purchase of one place rather than any one of several others that might seem equally desirable to a novice, and an experienced engineer can surely make a big saving in development costs by properly laying out and planning the work to best meet the requirements of the particular job. The per acre cost of such work on the developed place will not be great.

There are a great many good land levelers and farm developers in the Sacramento Valley now, and many good schemes for removing the dirt required in digging drains, constructing ditches, making borders and leveling the land between the borders, assuming that a border system of checking land for alfalfa or trees is to be used. And any system is a good one that results in the construction of drains of ample depth and capacity—ditches big enough to carry the water required and with good, full banks that will insure their stability and a minimum of breaks and trouble, borders or checks large enough to control the flow of water but not larger than is necessary to accomplish this after they have settled, and in land well leveled between the borders so that the water can be evenly applied and quickly and completely drained off when required.

For a great deal of the heavier, rich land in Glenn and Colusa Counties in the Sacramento Valley checks or borders 25 to 50 feet wide and 660 feet long have been found very satisfactory for alfalfa, and for tree planting it is an advantage to plant trees on these small borders, thereby giving a little more open and well aired soil for the roots to start in. This is especially beneficial if there is a wet year one or two years after planting.

As I have said there are many good land developers in the Sacramento Valley with many favorite plans for proceeding with a job of leveling, but my way is to first dig the drains, then the ditches, then the borders or checks, and lastly, move such dirt as is necessary to complete the leveling of the land between the borders. Dirt must be moved, either in making cuts or fills, for each of these features and my plan is to never move the same scraper full of dirt but once if it is possible to avoid it. The dirt that comes out of the drain is used for any part of the balance of the job where it is most convenient to waste it, on a ditch bank, a border or in a hole in the check, but it must be deposited where it will not have to be moved again. The dirt excavated from the delivery ditch goes in a border or in a fill, and dirt required for banks comes from high places in the check. Then the balance of the dirt for the borders comes from cuts in the checks—and any remaining fills to be made in the checks after borders are made must come from the remaining cuts within the checks.

Now this work is frequently done in exactly the opposite order, the land is leveled wtih some leveling device or even with scrapers, then the borders are made. Some of the same dirt that has been moved to fill a hole in the check may have to be moved again to get dirt for the border and some more dirt moved again to fill the hole just made. Then a borrow pit must be made to build ditch banks, and fre-

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quently a long haul made to spill the dirt from the drain evenly over the check.

I do not recall an instance of too great care being used in the leveling of land. I know of many cases where too much money has been spent for the results accomplished, but none where a job has been done so well that the land irrigates more easily than is profitable or where it drains too perfectly. But everywhere there are examples of the loss of crops and money through too careless preparation of the land for irrigation. High spots that do not get water, low spots where the crop drowns out, ditches that break, drains that are too shallow or that do not work, all of these things can be remedied with far greater ease and much less cost before a crop is planted than after, and there is no better or surer way to find out about these things than to try out the job with a head of irrigation water before any crop is planted. This will show up the weak places at a time when they can be easily and quickly fixed. Then after they are all remedied, try irrigating the land again before planting; there may be several other little things you will be glad that you have fixed before there was a crop in the way.

And it is a wise thing for the beginner to lay out a small piece for the first planting rather than the whole place. There is no way to learn how to prepare a place for irrigation so that it suits your individual tastes so well as to fix up a small acreage first. There will be sure to be some little changes you will want to make in the rest of the place.

Water Delivery System

Whatever this is, whether open ditch or underground concrete pipe, have it of ample capacity. I know of no better way to determine what this will be for the individual needs of any particular place than to visit one where a system similar to the one contemplated has been installed. An engineer can be of help on the size and capacity of concrete lines, as he can on open ditch capacities, but any irrigator who has handled a head of water in a ditch will tell the inquirer that the ditch must be plenty big for the head of water, have big, full banks, and if possible the slope of the banks should be such that they can be mowed with a horse mower. It is hard to find dirt to enlarge a small ditch after a field is completely seeded to alfalfa.

The working out of all of the details of irrigation practice in the Sacramento Valley is a proposition that is in its infancy; the best general advice I can give to anyone is to study his individual problem and don't be afraid to dig holes in the ground.

Questions and Answers

THE EDITOR AND STAFF

Questions to be answered in this department should be received at this office one week before reply is expected. Write plainly on one side of the paper and sign full name and address. Unsigned communications receive no attention.

Roup in Turkeys

What is the cause and remedy for turkeys having swelled heads? I have some young ones and some of them have a swelling on each side of the head above the nostrils. They are on the range and are fed wheat, corn and oats, and fresh meat every other day and a steamed mash the rest of the time. Will turkeys fatten better cooped up or at large?—Subscriber, Utah.

It is a bad cold or roup. Examine the swellings and if they are soft open them with a sharp knife and wash out the cavity with warm water that has a little carbolic acid in it. Keep them in a warm, dry place until well. Feed them chopped onions in the mash and also put in a teaspoon of red pepper and a teaspoon of sulphur for every eight turkeys. They will fatten much better cooped up.—W. E. P.

Chicken Pox of Turkeys

Two of my turkeys have sore spots on their heads. Some of the spots are raised and hard and some flat. There is no pus.—Subscriber, Porterville.

Your turkeys have chicken-pox, which is a very infectious disease. It may have been brought to them on the shoes or clothing of visitors or on your own, if you have been near infected birds, or they may have taken it from germs remaining on the premises from previous invasions of the disease. As they seem to have it lightly, anointing the sores with carbolated vaseline or some other antiseptic ointment will probably be all the treatment they need. Your main care should be to be rid of the infection before it reaches the rest of your flock. Keep the affected birds in quarantine and thoroughly disinfect roosts and feed troughs with carbolineum, zenoleum, carbolic acid or cresol disinfectant. Scald all porcelain and tin vessels with boiling water, and take every precaution not to carry the infection from the sick birds to the well ones.—J. A. K.

Worms

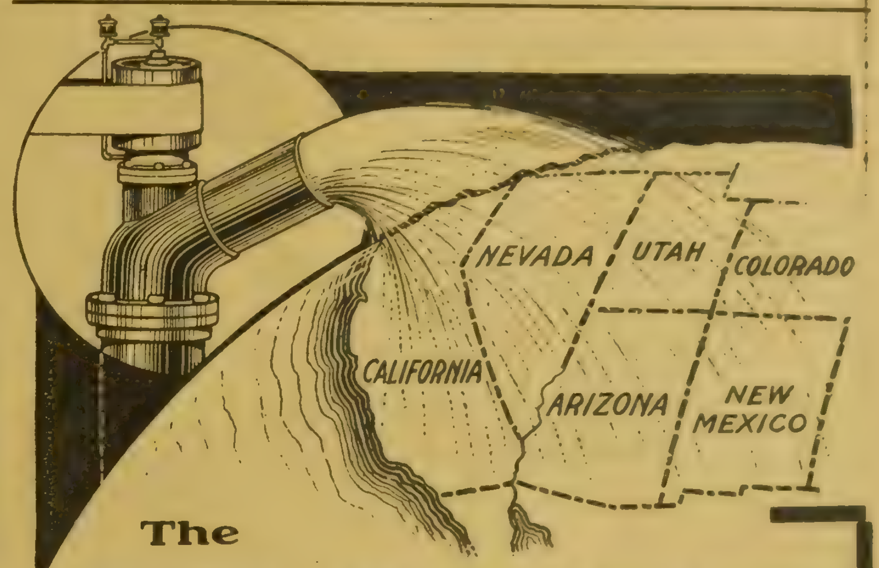
Chickens three to four months old get droopy and in a few days die. Dissection shows their entrails to be swarming with worms two and one-half to four inches long. Can you inform me of cause and treatment?—Subscriber, Owensmouth.

One of the best remedies for worms is oil of turpentine which may be mixed with an equal quantity of olive oil and 20 to 30 drops of the mixture given at a dose. This is followed in two hours by two to three teaspoons of castor oil. Pumpkin seeds are considered an excellent remedy by many practical poultrymen. They should be chopped or ground and fed to the chickens after a fast of from 12 to 24 hours. The best way of giving any worm medicine is to feed but lightly at night and then give the remedy in the morning before the birds have eaten. Two hours after the medicine give castor oil or Epsom salts, 40 grains for an adult bird, half as much for half grown stock. An hour later the birds may have a light ration. It is difficult to say just what is the cause of worms. Some authorities say there are always a few in the intestines, but it is only occasionally that they become numerous enough to make trouble. Others declare that feeding milk causes them. Sometimes, no doubt, they come from infested soil. If the ground you are on has been used for chickens a good may years it would be a good plan to move them to clean ground, at least until a crop of some sort can be grown in the runs that are infested. Feeding troughs and drinking vessels should be thoroughly disinfected.—J. A. K.

Lemons Pollenizing

I am told that Ponderosa lemons will mix with other varieties in the orchard. Is this so?—Subscriber, Santa Cruz.

It depends upon what our subscriber means by the word "mix." As to affecting the fruit of a Eureka or Lisbon, or other desirable variety, we do not think there would be any material effect from planting the Ponderosa in the orchard. It is possible they might have more seed and if these seed were planted and seedling trees allowed to grow without budding it is reasonably sure that the tree would show the effect of the inferior fruit being planted in the orchard. We realize that cantaloupe or melon growers will not grow their melons nearer to cucumbers than is absolutely necessary because of the effect of the pollen from the cucumber blossoms on the fruit which comes from the melon



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blossoms but growers of tree fruits, as a rule, do not consider this effect at all injurious.

Planting Iris

Can one set Japanese iris at this season?—Subscriber, Covina.

Yes, you may plant it at once. In fact, German and other iris may also be planted now though if planted earlier it would have been as well.

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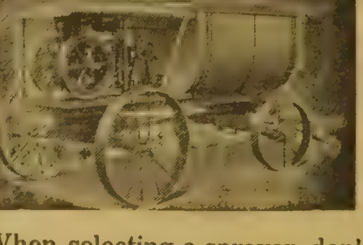

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Rust

Have been troubled with what appears to be rust or yellowing of the leaves on many of my plants. Will this hold over and if so how can I control it? Wistaria Aquilegia is the most seriously affected.—Subscriber, Covina.

If this rust is yellow or shows so-called orange colored rust it should be pruned out and the branches carefully burned. This often affects blackberries and similar fruits very seriously. It will hold over and may be prevented when the leaves start in the spring by spraying with a weak solution of Bordeaux mixture. However, complete destruction of the leaves and branches showing it is the best treatment.

Pickling Limes

We have been requested by a subscriber at Santa Cruz for a method of pickling limes. If any subscribers of the Cultivator have had experience along this line we will appreciate hearing from them.

Geese

A subscriber at Little Rock, Los Angeles County, writes for information as to where geese can be purchased in large numbers, also, he wants to know price of goose eggs.

Louis B. Stanton, attorney, 243 Wilcox Building, Los Angeles, will answer legal queries in this department.

Immediate mail replies cannot be given except where fee to Mr. Stanton is paid. When replies are wished in Cultivator address query to 115½ N. Broadway, Los Angeles.

Collecting Wages

A was employed on a ranch for a period of ten months by the day. Employer laid him off but refuses to pay amount still due. A drew small sums of money at intervals. Is employer liable for payment under state compensation act? In what way can employer be made to pay or what action must be taken to collect wages due?—Subscriber, Anaheim.

You may bring suit against the employer for the amount of your wages or you may file application with the commissioner of the bureau of labor statistics who has power to hear and decide disputes arising from wages earned in seasonable labor.

(The workmen's compensation act has to do only with compensation for injuries received while in employment of others.—Editor.)

Railroad Lands

Please inform me as to railroad lands. If for sale at the government price does the government stipulate that the railroad company must sell at the maximum price of $2.50 per acre? If I select a parcel of railroad land are they compelled by law to sell the same to me?—Subscriber, El Monte.

Railroad lands are granted by the government to the railroads at different times and under different provisions. The general maximum price is $2.50 per acre, but the question is too indefinite to answer accurately.

Ditch Right

A man owns property through which a ditch runs and farther down waters some 300 acres of land. The ditch was on the property of a water company, but was abandoned by the company though it was continuously used by one party who now is to be affected by the proposed closure of the ditch. This one man procured his patent on the basis of that ditch and has had water on his land and the uninterrupted privilege of using the ditch (though not all seasons actually using it), for the past eight years. Can ditch be closed without user's consent?—Subscriber, Porterville.

It would appear from your statement that you, together with your predecessor in interest, had acquired an easement over the land through which the ditch runs and are entitled to have said ditch kept open. If, however, you had a mere license to run your water through the ditch it would not ripen into a right. The best method to have your rights determined would be to bring an injunction against the party who is threatening to close the ditch and have your rights determined before any damages occur.

Collection on Lien

In September, 1914, I agreed with C tc plant 3000 orange trees, also have another account for labor of $150.00. On completion of work was paid only $90.00. C bought the land on contract and has failed to comply with his contract so that the original owner has started foreclosure. Is there any way that I can collect or hold the land for this amount?—Subscriber, Orange.

Any person who at the request of the owner of any lot or tract improved same has a lien for his work done and materials furnished; unless you are too late your proper proceeding would be to file notice of your lien at recorder's office of your county and bring suit against the person who employed you in addition.

Payment for Hay Sold

A sells to B 100 tons of hay, receives a small deposit and promise of balance soon. After several weeks A makes demand for balance but receives only part. After another few weeks A demands the full balance and receives a promise of payment on a given date, but on that date B does not pay the balance. Would A be at liberty to sell the hay to other parties? If B should go to stack and load his wagon could A refuse to let him move it until balance is paid?—Subscriber, Salida.

The seller of personal property has a lien upon such property for the purchase price, dependent upon possession. Upon failure to pay the purchase price the seller may sell the property for the account of the buyer, and if it is sold for less price than the buyers contract to pay, may hold the buyer for the difference.

Line Fence

A and B own neighboring farms with one-half mile line between. Both farms are enclosed by fence, the north half of the dividing fence is built and maintained by A, the south half by B. A sells north half of his farm, which includes the half of the division fence that he is responsible for, to C. I wish to know if A has any interest in the division fence remaining between him and B after he has sold the north half. Does C have to keep up all the fence between him and B or is a new division made giving B half of the north half between him and C and giving A half of the fence remaining between him and B?

If a fence separating the lands of adjoining owners is built by one of them entirely on his own land, it belongs to him, but if the fence is erected on the line belonging to each, as tenants in common, either may repair or if either destroys or removes he is liable to the other.

(In other words, once the fence is built on the line it is the property of both land owners and both C and A are entitled to a say as to removal and each should share with B in the cost of upkeep of fence between his property and theirs.—Editor.)

Unsurveyed Government Land

I am living on some of Uncle Sam's land and it was never surveyed until this last summer, but years ago there was a road declared that runs angling through it. Can I put the road on section line or on quarter line if it is more convenient? If so, how shall I proceed if the neighbors are not willing? Also I live on a slope where it is hard to get a well, so I went as low down the slope as I could to dig a well and the survey is east and north farther than anyone thought, so my well is on the neighbor's some ten feet. Can he stop me from using it or can he force me to pay a big price for it when he gets a deed for his place? I have done all the fencing. He agreed to do 80 rods but didn't have time, so to save my crop from his stock I had to build all of it.—Subscriber, Mas Doel.

The statement of facts is too incomplete to give any definite answer on any of the questions, but the following may be of some use to you, so are given: Any ten freeholders who are accommmodated by the road may petition the board of supervisors to discontinue the road or lay out a new road. The petition sets forth a general route of the road to be appointed or laid out and the names of the persons over whose lot the same is to run. Petition must be accompanied by bond, that in case the prayer is not granted the cost of surveying will be paid. Thereafter the road is by order of the board of supervisors viewed and surveyed. A report is made by the surveyors to the board and after notice given the board may either order the road made or reject the application. It is probable that your neighbors have acquired rights by use of the present road.

If you and your neighbor have agreed upon a boundary line between your property and upon the faith of that agreement you have entered upon and improved the lands upon your side of the agreed line, your neighbor could not thereafter dispute this line as the true line, but if this line was drawn by mistake he will not be stopped from ascertaining the true line as found by the survey, in which case you would have no rights upon his land.

If you and your neighbor have agreed that he would do 80 rods of the fencing and he nevertheless failed to do so, and you did the same, you can bring action to collect the value of the fencing done by you, which he agreed to do. Whether you could establish your case or not would of course depend upon whether you could establish the agreement.

FIFTH ORANGE SHOW

There will be two new competitors for world's honors in the Fifth National Orange Show, February 17 to 24, for Santa Barbara County and Oroville, which did not figure in the exposition last February, are both planning big exhibits.

Indications are that almost all of the districts which figured in the gorgeous display of 1914 will again exhibit in 1915. At least 90 per cent of California's crop will be represented.

Every Southern California orange and lemon district will construct beautiful feature displays, typical of their respective communities. In all 5,000,000 oranges will be used, it is now estimated. With big exhibits from northern California entered, Southern California will again have to defend its prestige.

The Household Department

THE NEW YEAR

Whisper "Farewell!" at midnight,
  To the Old Year whisper low;
Then open the Western door,
  Open, and let him go.

The work of the hands not good;
  The will of the wavering mind;
The thought of the heart not pure;
  The words of the lips not kind;

Faith that is broken or lost;
  Hopes that are fading and dim;
Love that is selfish and vain—
  Those, let him carry with him.

Whisper farewell to your doubts,
  To follies and faults that you know;
Then open the Western door,
  With the Old Year let them go.

Turn to the sunrising next.
  When shadows are growing thin
Set open the Eastern door
  And welcome the New Year in.

Welcome the order brave—
  "More faithfully do your part"—
Welcome the brighter hope,
  Welcome the kinder heart.

Welcome the daily work,
  Welcome the household care;
Clasp hands with the household love,
  Lift hands in the household prayer.

Forgotten be all mistakes,
  And over again begin,
When you open the Eastern door
  To welcome the New Year in.

A SURPRISE PRESENT

(Concluded from Last Week.)

Taking it off the chairs he drew a low stool to Grandmother's feet. "This is the one I used to sit on when I was a little tad while you wound the ball and told stories," he said, placing the skein in position on his hands. "Now then we're ready for business. Hope you've got some candy ready."

"Yes, I have," she laughed, as she began to wind. "A lot of it. I always make molasses candy for Christmas. Don't you remember?"

"Of course I do. And of all the candy that took the cake."

He rattled on, excited as a boy, till the skein was finished; then with another hug, and a resounding kiss, he was off.

Grandmother's eyes followed him till he was out of sight. Then she went to her bureau, knelt down and, having unlocked the bottom drawer, took out something which she patted and smoothed affectionately.

"Oh yes, surprises are very nice," she said to herself with a soft little laugh.

Just enough snow fell to make perfect sleighing, and at noon at Christmas day the happy load from Robert Deane's drew up at his brother Oliver's gate.

The door flew open and from the welcoming group Ned sprang quickly out, took Grandmother from the sleigh and carried her laughing and protesting into the house.

When all were inside, divested of their wraps and seated about the glowing fire in the grate, Ned disappeared. In a few moments he returned with his arm about a very pretty young woman who dimpled and blushed in most bewitching fashion as he marched her into the room and straight up to Grandmother.

"Here's my present to the family," he cried gleefully. "How's a new granddaughter for a surprise? Pretty good one, eh? Now let's see some genuine old fashioned hugging."

"Indeed you will," cried the pretty young woman throwing her arms around the older one.

"Yes, indeed," echoed Grandmother, drawing her new relative close. Ned looked on in high approval.

"Oh, you two will be good friends all right," he observed complacently. "I knew it from the first. Now Gerty, let Grandma catch her breath, and I'll introduce you to Uncle Rob, Aunt Nancy and the kids."

This ceremony over, he remarked, "I'll have something on the tree for everybody, but altogether they don't amount to a row of pins compared with my family present."

"Oh Ned, do hush," exclaimed the present, blushing harder than ever.

"There won't be anything on the tree for Gerty but a bag of nuts and candy, because we didn't know about her in time," mourned Effie.

"Never mind, dearie," said the new sister, drawing the little girl to her. "Don't you see what a lot of nice presents I have? All these new relatives? And then I'll keep Ned company. He'll have to be contented with nuts and candy, too."

"Serves him right," grumbled Oliver the second. "He might have told."

"O Ned will have a pair of socks, you see if he don't!" shouted Robert Junior. "Grandmother had some ready, I'll bet!"

Everybody laughed, and Grandmother kept her own counsel.

They gathered at length about the big, beautiful tree in the front parlor, and by vote of the company Oliver the first was chosen to gather and distribute its motley fruit.

"To my dear Ned, from his loving Grandmother," was the legend on a package wrapped in tissue paper, and tied with bright ribbons.

Ned unrolled the parcel, and held up, not one pair of socks, but two, and the softest, finest wool. Such socks as these had never come from Grandmother's needles before.

"Why, Grandma, how did you happen to treat me so much better than I deserve this year?" Ned questioned, giving her a resounding smack. For answer she only smiled inscrutably.

And now the distributing agent took down another tissue covered parcel and read:

"To Ned's wife, from her affectionate new Grandmother."

Wonderingly the new bride undid the ribbon fastenings while all looked on in eager interest. In a moment she held up before their gaze two pairs of lovely pearl-gray silken stockings.

"Why, Grandma!" she cried, "you surely didn't—" then she examined them more closely. "Did you really knit these yourself?"

"Of course I did," Grandmother replied happily, her eyes shining like stars.

"Think of it!" Such a piece of work. O, I never can wear the beautiful things. I'm going to keep them always, and look at them every day." Then the feature of the case which had at first escaped her now presented itself. "But how did you come to knit

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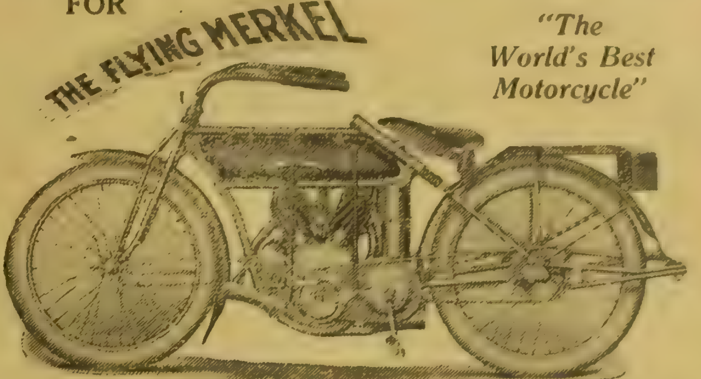

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It will speed up to 60 miles an hour and throttle down to a walk in a few seconds. It has the latest improved spring frame and spring fork; two speeds without having to release the clutch in changing gears; the Miami Direct Starter that ensures a quick get-away by merely pressing a foot lever, and a dozen other exclusive features.

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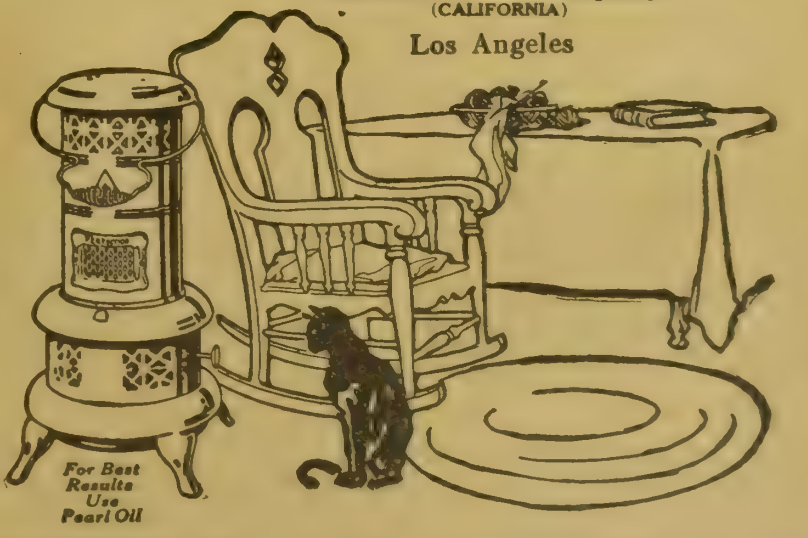
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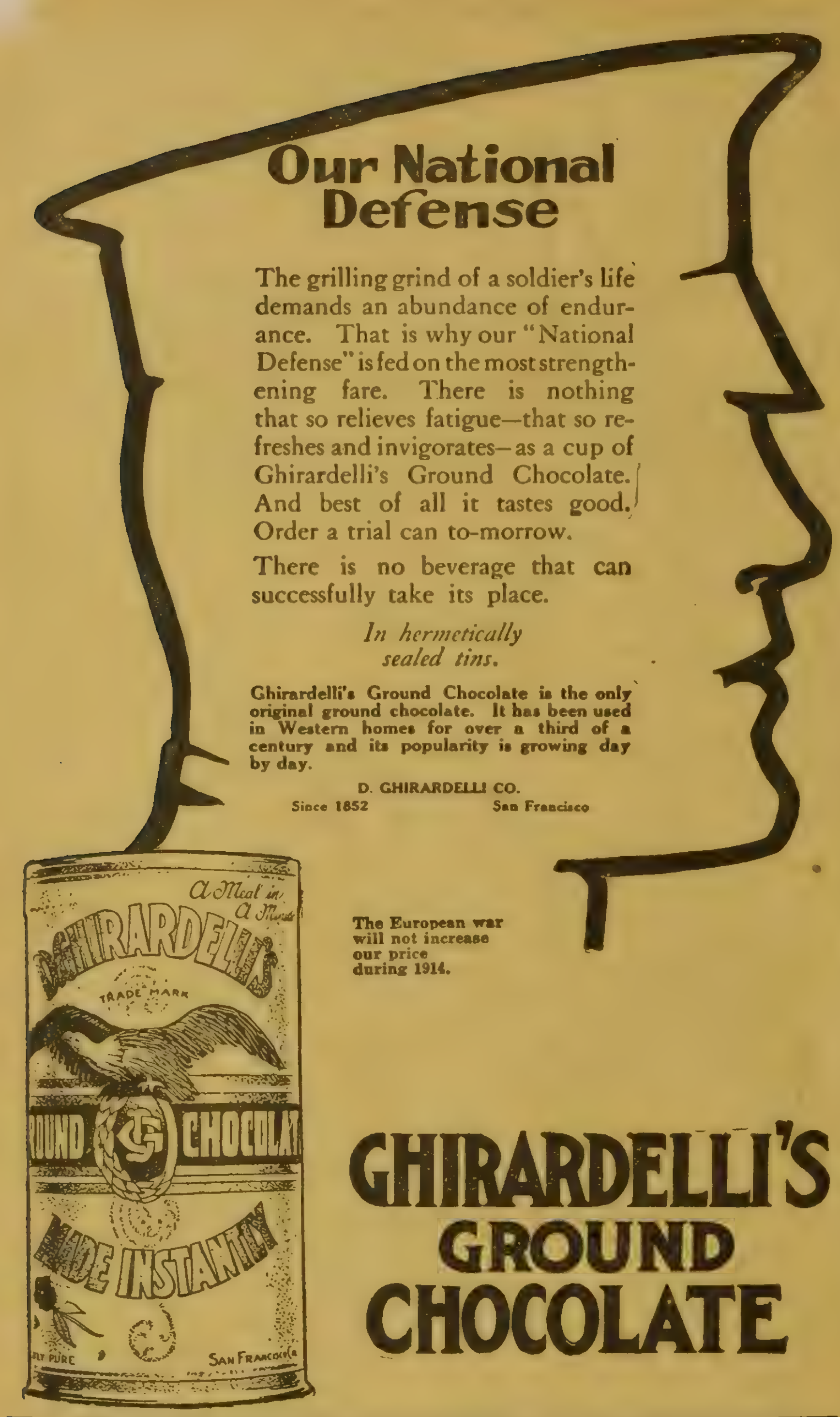

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them? You didn't know Ned had a wife until he came home."

"Did you know, Grandma?" Ned demanded. "Had you heard in any way?"

"Well—no, not exactly," the old lady responded, her face expressing her keen enjoyment of the situation. "But when I read your letter telling about your finding such good fortune—something better than money, I didn't need anyone to tell me that you'd found a nice girl for a wife. I thought the rest of the folks were dreadfully stupid not to see it, too. But as long as they didn't I wasn't going to open their eyes. And I knew you were going to bring your wife home Christmas.

"Surprises are nice," she added, beaming upon the astonished young couple. "I always did enjoy them."—Farmer's Review.

THE AVOCADO

Kindly tell me how the avocado is used. If you can give recipes for using it in salads or otherwise I will appreciate it—Subscriber.

In Bulletins 61 and 77 of the bureau of plant industry, United States department of agriculture, and Bulletin 25 of the Hawaiian agricultural experiment station, United States department of agriculture, we find the following information regarding the avocado, with recipes for its use. We doubt not the subscriber may obtain copies of the bulletins mentioned without cost by writing for same.

Other recipes are given in a booklet, "Tropical Fruits for California," published by West India Gardens. A number of these will be published next week.

The avocado should not be used until the meat cuts smoothly with a teaspoon and is about the consistency of well-frozen ice cream. No one should attempt to eat the fruit after it has softened; a rancid avocado may well be compared to rancid butter.

The avocado is a salad fruit and its uses are as varied as those of other salad fruits or vegetables. One should not, however, deluge this rich fruit with oil nor overpower with condiments its mild, nutty flavor. Combined with lobster or other shell fish it is said to make a delectable salad.

The simplest way to use the fruit is to halve it, remove the seeds and dip out the fruit with a teaspoon. If desired a bit of salt may be added. Some use pepper in addition. The novice usually considers some form of acid necessary to add piquancy.

In Guatemala, Porto Rico, parts of Mexico, and doubtless elsewhere, the avocado is sliced raw and added to soups. Even a small piece of the soft pulp crushed in a plate of soup imparts a delicate flavor.

Salads

Cut the meat into cubes, mix with sufficient mayonnaise to coat well, serve on a platter, piled high in the center, and sprinkle over chopped hard-boiled egg.

AN AVOCADO SALAD MADE FROM A SINGLE CALIFORNIA GROWN FRUIT; TWENTY PER CENT OIL IN A MOST DELICIOUS AND DIGESTIBLE FORM.
Courtesy of West India Gardens

Divide in half and carefully remove meat. Add the yolk of a hard-boiled egg and one tablespoon of French dressing for each fruit. Press through a sieve and pile in the half-shells. Garnish the tops with the whites of eggs chopped fine, a sprig of parsley, and one small red pepper.

Combine sliced avocado, cucumber, tomato, and a few shreds of chili pepper and serve with mayonnaise or French dressing.

Sandwiches

Slice the fruit with chopped chili peppers or cayenne and place between thin slices of buttered bread.

Butter thin slices of bread, spread with a paste prepared of mashed avocado mixed with a dressing of oil, salt, tarragon vinegar and a little nutmeg.

Avocado Cocktail

Cut fruit into dice, or small pieces, and serve in glasses with cocktail sauce made of tomato catsup and lemon juice, seasoned with salt and pepper. Serve ice cold.

Avocado Ice Cream

Yolks of five eggs, one quart milk, green maraschino cherries, two cups sugar, four medium-sized avocados, almond and vanilla extract. Make a boiled custard with the milk, eggs,

Great Family Combination Offer

We do not know of any Family Weekly that we can more heartily recommend to our readers than The Youth's Companion. It gives us pleasure, therefore, to announce that we have again arranged with the publishers to make the following offer:

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and one cup sugar, and flavor with vanilla. Mash the fruit to a pulp with one cup sugar and flavor with almond. When the custard is cool, add the fruit and freeze. Serve in mounds with a green maraschino cherry on top of each dish.

THE GREAT DAY

By Edward S. Martin

Christmas is a lot of trouble. It is very, oh, very expensive! It is extravagant. It is tiring. But it is worth it all—all the money, all the effort, all the pains; for it is the great day in all the year. The Fourth of July, Washington's Day, Lincoln's Day, Memorial Day all stand for patriotism, and Labor Day stands for rest, and New Year's stands for a fresh start, but Christmas stands for everything: for the love of country and the love of man, for work and rest and a fresh start, for the life that is and the life that is to be, for hope, for joy, for civilization.

Moreover, it stands for fulness of life. It is no pinched-up festival. The full stockings and the full stomachs, with which some of us celebrate it, have a good deal of fitness, material tokens though they are of matters chiefly spiritual. "It is true," says a recent writer, "that Jesus Christ offers the example of an absolute renunciation of much that makes up the life of the greater proportion of mankind; but it is done for the sake of the life." For the sake of the life; that there should be more, not less; that it should be better to live and better worth living, but valuable and livable in spite of privation, or even at times by dint of it.

It was that enormous revaluation of life that came to earth on the first Christmas Day, that makes that day the most important in all human history; that makes the writer just quoted find it reasonable to aver that history, in the real sense of it, only begins with the birth of Christ, since the people that have not yet claimed Christianity have no true history, but a mere chronicle of ruling dynasties, butcheries and the like.

The great knowledge that it belongs to us to acquire is the knowledge of Christmas; what its spirit is, what it stands for, what was the new idea it brought to earth. Round that idea our present world revolves.

Our civilization is based on it, moving forward as it accords with it, hesitating or receding as it conflicts with it. The problem of our politics and of our economics is the infusion of the spirit of Christ into the relations of men. Of course that is an enormous task. Men have been working on it for nineteen centuries, and it seems sometimes as if they had only begun. There goes on interminably the conflict between "It is good to have, to rule, to compel," and "It may be better to forego, to serve, to yield." It is not having or foregoing that is important; it is that within us that is helped and developed, now by having, and again by going without. That is what is important—that which is within us.

Since Christmas came, the true measure of a man has been that which is, or may be, within him, and thereby has come an immense appreciation of the value of men. They are "hands" no longer; they are "masses" no longer; they are individuals, each with a great possibility of value. To ignore or neglect them, or fail in doing what we can to benefit them, may be to miss a treasure by oversight, and blear our own vision by failure to discern.

Perhaps that is why we make as much as we can of everybody at Christmas time, and neglecting our ordinary pursuits, give gifts where we can, spread feasts where we can, give such evidence as we may that everybody whom we can reach is important to us, and that there is love in our own hearts.

"Peace on earth, good will to men" seems a long time coming, but no one need wait for its universal sway. It has come to every one who feels it within him. It has been brought to earth, and there it is for the taking, and never was a time when reachers out for it seemed so many.

Merry Christmas to all of them, and to all mankind!—Edward S. Martin in Youth's Companion.

ONLY A PENNY'S WORTH

"Jimmy," said the gentle old lady, sadly, to the young imp who lay with a broken leg in the hospital, "the nurses tell me that you have been a very naughty boy."

"Yus, missus," acknowledged Jimmy, his sunburned face and tousled head half hidden in the pillow.

"But why?" came the gentle query.

"Can't 'elp it, missus," shamefacedly whispered Jim.

"Now look here," said the old lady, as she rose. "I shall be at the hospital again next week, and I want you to promise me to be a good boy till then, and if so you shall have a whole shilling."

Jim fervently promised, but, alas! all his old mischief reasserted itself, and he was sadly in disgrace when the old lady again visited the ward.

"Well, little man," she said, kindly, "I'm not going to ask the nurse if you have been a good boy. Tell me yourself. Now, do you deserve that shilling I promised you?"

Slowly Jim raised his great brown eyes to her face, and then lowered them again. "Gimme a penny!" he said, in a low voice.—Answers.

DESCRIBING LOVE

In "The Desert and Mrs. Ajax," by Edward S. Moffat, one of the characters, an American girl, thus describes love.

"Oh, Amy (she says), isn't it splendid when you love some one? You just want to sacrifice—and give up—and work—and be devoured by fire or drowned in ice water if it will do any good. Sometimes it makes you feel, oh, so strong! And then, almost right away, your knees get wabbly, and you just turn into a cobblestone inside. And one minute he's looking at you in the most wonderful way, and you feel as if you were floating on a lovely pink cloud, eating ice cream smothered in violets, and the next thing you know something terrible happens, and everything goes to pieces, and you see that he doesn't love you after all—and, oh h-h!"

NOT A SONG BIRD

Something went wrong with the mechanism of the elevator in an old-fashioned Southern hotel, and the passengers, six men, were imprisoned between the floors for three hours. They made themselves as comfortable as they could while they waited. Each one had told his choicest story, and finally some one suggested that they sing a song to help pass time away.

"You can sing, can't you, Sam?" said a salesman to the negro elevator boy. "Just lead off with 'Dixie,' and we will all join in."

But Sam did not lead off, as expected. "Ah can't sing, boss," he explained. "'Deed Ah can't. I know most men of my color can sing, but I couldn't carry a tune, no indeed. I couldn't carry a tune if some one should give me one all tied up in a bag!"

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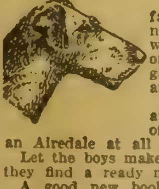

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PUBLICATION	Guaranteed Circulation
The National Stockman & Farmer Pittsburgh, Pa. Established 1877.	125,000 Weekly
The Farmers' Review Chicago, Ill. Established 1877	100,000 Weekly
The Farmer's Guide Huntington, Ind. Established 1889.	80,000 Weekly
The Nebraska Farmer Lincoln, Neb. Established 1859.	50,000 Weekly
Farm and Ranch Dallas, Tex. Established 1882.	90,000 Weekly
Field and Farm Denver, Colo. Established 1872.	30,000 Weekly
California Cultivator Los Angeles, Cal. (Rural California merged July 1, '14) Established 1877.	21,000 Weekly
The Washington Farmer (Formerly The Ranch) Seattle, Wash. Established 1881.	20,000 Semi-Mo.
The Oregon Farmer (Formerly Oregon Agriculturist) Portland, Oregon. Established 1891.	15,000 Semi-Mo.
The Idaho Farmer Boise, Idaho.	10,000 Monthly
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The California Cultivator
Subscription, $1.00 a year
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San Francisco-Los Angeles Produce Markets

Los Angeles Market

LOS ANGELES, Dec. 23.

The prices given below, except where otherwise noted, are those made by wholesale or commission houses to retailers, and are intended to give producers the range of the market rather than an indication of prices which they will secure. Jobbers' quotations to producers are not given.

BUTTER

Butter has remained at last week's quotations without any change.

Prices to trade 4 cents above following quotations:

Creamery Extras	.30
First	.28
Country	.23
Ladle	.22

CHEESE

Prices to trade, 1 and 2 cents higher:

California Fresh	14½@15
Domestic Swiss	20@21
Eastern Daisy	18@18½
Longhorn	18½@19
Imported Swiss	36@38
Oregon Triplets	17@17½

EGGS AND POULTRY

The egg market was forced higher, as producers of this section started to ship their product to San Francisco, a condition made possible by the fact that the northern market was almost 10 cents higher.

Prices to trade, 3 cents higher than following quotations:

Fresh ranch, case counts	.48
Candled	.52
Northern Case Counts	.54
Petaluma-Santa Rosa	.55

Prices to producers:

Hens, lb.	.15@18
Roosters, old	.9
Broilers, lb.	.26
Fryers	.20
Roasters, lb.	.15
Turkeys	.18@20
Ducks	17
Geese	.16
Squabs, doz.	2.00

LIVE STOCK

The following quotations are f. o. b. Los Angeles on all stock:

Hogs, 175 to 200 lbs., per cwt.	$7.75
Prime Steers	7¼@7½
Heifers	6¼@6½
Calves, lb.	8½@9
Sheep—	
Ewes, head	4.50
Wethers	4.50@5.00
Lambs, head	4.50@4.75

POTATOES

Wholesale selling price:

Idaho	1.30@1.35
Sweets, lug	.60@75
Northern Burbanks, cwt.	1.30@1.40
Salinas	1.75@1.85
Shimas	1.45@1.50
Lompocs	1.70@1.80

ONIONS

Australian Brown, cwt.	1.50@1.65
White Globe	4.50
Yellow Danvers	1.50@1.65
Garlic	15@17

VEGETABLES

Wholesale selling price:

Artichokes, Northern, doz.	80@1.00
Beets, doz.	.30@35
Beans, String	11@12
Lima	5@6
Cabbage	65@75
Carrots, doz.	30@35
Cauliflower, doz.	60@70
Celery, crate, northern	2.25@2.50
Local	1.75@1.85
Cucumbers, hothouse	65@1.25
Egg Plant	7@8
Escarole, doz.	.40
Horseradish, lb.	9@11
Leeks, doz.	.35@40
Lettuce, crate	.75@85
Mint, doz.	.35@40
Parsnips, doz.	25@30
Okra, lb.	9@10
Onions, Green, doz. bunches	15@20
Oyster Plant	30@35
Peas, lb.	10@12
Peppers—	
Bell, lb.	5@6
Chili, lb.	4@5
Pimientoes	6@7
Pumpkins, lb.	1@1½
Radish, doz.	20@30
Rhubarb, box	75@85
Spinach, doz.	.20
Squash—	
Summer, lug	1.25@1.40
Chayote, lug	55@65
Crookneck	45@55
Hubbard, lb.	1¼@1½
Turnips	30@35
Tomatoes, lug	80@90

FRESH FRUIT

Wholesale selling price:

Apples—	
Bellflowers	.75@1.00
Jonathans	1.35@1.60
Spitzenbergs	1.35@1.75
Rome Beauty	1.25@1.35
Pearmains	75@90
Bananas	3½@4
Berries—	
Strawberries, basket	6@12
Blackberries	13@15
Casabas, doz.	1.25
Cranberries, bbl.	9.00@9.25
Figs, box	1.75@2.00
Grapes	1.25@1.60
Guavas, basket	5@7
Pears, Winter Nelis, lug	1.50
Persimmons, lb.	5@8
Pineapples, lb.	5@6
Pomegranates, box	1.50@1.75
Quinces	75@85

CITRUS FRUIT

Wholesale selling price:

Lemons	1.75@2.35
Grapefruit, Seedless	2.00@2.25
Navels	2.00@2.10
Tangerines	1.50@1.75
Limes, basket	.75@1.00

DRIED FRUITS

Wholesale prices to retailers are:

Evaporated Apples, Fancy, lb. boxes	6¼@7½
Apricots	8½@10
Nectarines	12½
Peaches	5½@6
Pears	8@12
Prunes	5¾@17
Plums	10

NUTS

Prices named by California Walnut Growers' Association are:

No. 1	16½
Budded Walnuts	.20
Jumbos	.19
No. 2	.12
Culls	.9

Prices fixed by California Almond Growers' Exchange, f. o. b. California.

Almonds—	
Nonpareil	.21
I X L	.20
N P U	.19
Drake's Thinshell	.15
Pecans	.17
Peanuts—	
California, Raw	.6
Japan	.7½
Eastern	.7½
Rice Corn	5.00@5.25

HONEY

Wholesale selling price:

Comb, Fancy, Water White	.14
White	.12
Light Amber	.11
Extr. Water White	.7
White	.6
Light Amber	.5½
Beeswax	.32

RICE

Wholesale selling price:

California	4.75@5.00
Broken	3.50@3.75

BEANS

Wholesale selling price:

Producer's price not far from one dollar under these quotations:

Limas	5.60@5.75
Lady Washington	5.15@5.25
Pinks	4.15@4.25
Black Eyes	4.90@5.25
Lentils	8.00@9.00
Navy	5.25@5.35
Small White	4.80@4.90
Garbanzos	6.00@7.50

HAY

Buying prices f. o. b. cars Los Angeles:

Barley	10.00@11.00
Wheat Hay	10.00@11.00
Tame Oat	11.00@13.00
Alfalfa	9.00@11.00

GRAIN

Wholesale selling prices f. o. b. Los Angeles:

Corn, Yellow	2.00
Corn, White	2.10
Wheat	2.25@2.35
Oats, Red	1.95@2.25
Oats, White	1.90
Kaffir Corn	1.75
Millet	3.75
Popcorn	4.75@5.00
Egyptian Corn	1.85
Barley Seed	1.55
Milo Maize	1.75
Cal. Seed Oats	2.25
Sunflower Seed	6.50

FEED STUFF

Wholesale selling prices f. o. b. Los Angeles:

Bran, Heavy	1.55
Alfalfa Meal	1.05
Alfalfa Molasses, per cwt.	1.15
Beef Scraps	3.00
Beet Pulp	1.25
Cracked Corn, cwt.	2.05
Cracked Wheat, cwt.	2.40
Cotton Seed Meal	1.75
Bloodmeal	3.60
Bone Meal	1.95
Meat Meal	3.00
Bone, Green	1.85
Charcoal	1.90
Oil Cake Meal	2.15
Fish Meal	3.15@3.25
Rolled Oats	1.90
Rolled Barley	1.50
Middlings	1.95
Feed Meal	2.05
Oat and Wheat Middlings	1.70

San Francisco Market

SAN FRANCISCO, Dec. 22, 1914.

The prices given below, except where otherwise noted, are those made by wholesale or commission houses to retailers, and are intended to give producers the range of the market rather than an indication of prices which they will secure. Jobbers' quotations to producers are not given.

BUTTER

Sales of butter have been very limited, practically no change in price.

Prices to trade, 4 cents above following quotations:

Extras	.29
Prime Firsts	.28
Firsts	.26
Seconds	.27½

CHEESE

Wholesaler to retailer.

Oregon Y. Am.	.16
Young America	13@14
California Flats	10@12½
Cheddar	.20
Oregon Twins	14½

EGGS AND POULTRY

Eggs have made a tremendous advance since last week, fancy ranch bringing 57½ cents.

Prices to trade 3 cents higher than following quotations:

Extras	.57½
Select Pullets	.49½
Storage Extras	.30
Storage Select Pullets	.27

Price to producer:

Hens, lb.	.15@18
Eastern	16@19
Fryers	.18@19
Roosters, old	.11
Roosters, young	.16@17
Broilers	.18@19
Ducks	.15@17
Geese, pr.	2.00@3.00
Squabs	2.50@3.50
Belgian Hares, lb.	9@10
Turkeys, live	16@19
Dressed	20@24

LIVE STOCK

San Francisco prices, gross weight:

Steers	4@7¼
Cows and Heifers	3@6¼
Calves, lb., live weight	6@9½
Hogs	5@7½
Wethers	6@6½
Ewes	5¼@5¾
Milk Lambs	7@7½

POTATOES

Wholesale selling price:

Delta Burbanks	.85@1.10
Salinas Burbanks	1.35@1.50
Oregons	1.20@1.40
Idaho	1.00@1.15
Sweets, cwt.	1.35@1.50

ONIONS

Wholesale selling price:

Oregon, Yellow	.85@1.10
Bermudas, crate	90@1.25
Garlic, new	10@12

VEGETABLES

Wholesale selling price:

Beans—	
Wax	5@8
Strings	8@12½
Limas	6@8
Brussels Sprouts, lb.	3@5
Cabbage, cwt.	1.00@1.25
Carrots, sack	30@40
Celery, doz.	10@20
Cucumbers, lug	1.25@1.50
Egg Plant, lb.	3@5
Lettuce—	
Southern	.50@85
Delta	1.25@1.75
Peppers—	
Bell, lb.	3@4
Chili, lb.	2@3
Squash, sack	40@50
Summer, crate	75@1.00
Tomatoes, lug	30@75

FRESH FRUIT

Apples—	
Newtown Pippins	.50@1.00
Bananas, Hawaiian, bunch	1.25@1.75
Cranberries, bbl.	12.00@13.00
Grapes lug	.80@1.00
Pears, Winter Nelis, wrapped, box	1.25@1.50
Pomegranates, box	.50@1.00
Pineapples	2.75@3.25
Persimmons	.50@1.00
Quinces, box	25@40
Strawberries, chest	3.50@5.00

CITRUS FRUIT

Wholesale selling price:

Grapefruit, Seedless, new crop	1.75@2.25
Lemons	1.50@3.00
Lemonettes	.75@1.25
Limes, case	3.00@5.00
Navels	1.60@2.25
Tangerines, halves	2.00@2.25

DRIED FRUITS

Wholesale prices are:

PRUNES—1914 crop, bulk basis: 30-40s, 7c; 40-50s, 6c; 50-60s, 6c; 60-70s, 6c; 70-80s, 6c; 80-90s, 6c; 90-100s, 6c. 1913 crop worth practically same prices. The above are for both Santa Clara prunes and stock from outside sections.

Other Fruits, 50-lb. boxes—	Standard	Ch.	Extra Ch.	Fcy.
Evaporated apples	...	4¾	5	5¾
Apricots	7½	8½	9	10½
Peaches	3¾	4	4¼	5½
Pears	7	8	9	10

RAISINS

RAISINS—The following prices are f. o. b. Fresno, as given out by the Associated Raisin Company for immediate shipment and are guaranteed against a decline till December 31st: Fancy seeded, 16-oz., 7c; 12-oz., 5¾c; bulk, 6c; choice seeded, 16-oz., 6¾c; 12-oz., 5½c; Thompson seedless, No. 1, 16-oz. pkgs., 7⅜c; 12-oz., 6c; 50-lb. cases, 6¼c; loose Muscatels, 1-crown, 5½c; 2-crown, 5½c; 3-crown, 5¾c; 4-crown, 6c; Sultanas, 50-lb. cases, 5½c; bulk, layers, 50-lb. bxs., $2.75; in 20-lb. bxs., 6-crown, $2.75; 5-crown, $2.25; 4-crown, $1.60; 3-crown, 5-lb. bxs., on all bulk stock, 50c additional; 10-lb. bxs., 25c additional. Cartons—Clusters, 20 to a case, No. 1, $1.70; No. 2, $2.10; No. 5, 4 to a case, $2.25. Local representatives of the association are asking about ¼c higher, while several of the largest packers are quoting ½c under these figures.

NUTS

ALMONDS—Prices fixed by Almond Growers' Exchange to the trade, f. o b. California:

Nonpareil	.21
I X L	.20
Ne Plus Ultra	.19
Drakes	.18

Wholesale selling price:

Peanuts—	
Unpolished	.5@8
Polished	6@6½
Japanese, Shelled	6¼@6¾
Italian Chestnuts	6½@7

BEANS

Wholesale selling price:

Limas	5.40@5.50
Lady Washington	3.60@3.75
Pink	3.50@3.65
Black Eyes	4.20@4.40
Cranberry	4.30@4.50
Small White	4.55@4.65
Garbanzos	5.75@6.00
Large White	4.30@4.40
Bayou	5.25@5.35
Manchurian Speckled Bayous	3.50@3.75
Manchurian Butters	3.90@4.10
Manchurian Cranberry	4.15@4.25
Red Mexican	545@5.55
Red Kidney	5.50@5.75
Horse Beans	3.00@4.00
Bayou	5.35@5.50

HONEY

Comb, Water White	14@16
Amber	10@12
Dark	7@10
Extracted White	7@9
Light Amber	6½
Dark	4@5½
Beeswax	27@32

HOPS

1914

Sacramento Valley	7@9½
Sonoma-Mendocino	9½@11½
Oregon Clusters	9½@11½

HAY

Under date of Dec. 19, Scott, Magner & Miller say:

Receipts of hay for this week were 1946 tons, last week 1736 tons, and the preceding week 1649 tons, thus showing a slight increase for the three weeks. Choice grades of hay are not in demand. Considerable interior alfalfa has arrived during the week. Straw is unchanged.

We quote the average wholesale prices on carload lots on today's market as follows:

Fancy Wheat Hay, lt. bales	11.00@12.00
No. 1 Wheat or Wheat and Oat	9.00@10.50
No. 2 Wheat or Wheat and Oat	6.00@8.50
Choice Tame Oat	10.50@12.00
Other Tame Oat	6.00@9.00
Barley	5.00@8.50
Wild Oat	6.00@8.00
Alfalfa	6.00@9.00
Stock Hay	4.50@5.00
Straw	.30@45

GRAIN

Alfalfa Seed	14@16
Wheat, Cal. Club	2.05@2.07½

WEATHER CONDITIONS

For Week Ending December 19, 1914

Report from the various stations of the U. S. Weather Bureau, by Geo. H. Wilson, director, San Francisco:

	Rainfall Data			Temperature Data	
	Past Week.	Seasonal to Date.	Normal to Date.	Maximum.	Minimum.
Eureka	.40	15.08	14.00	54	34
Red Bluff	.36	7.64	8.24	54	28
Sacramento	.93	3.85	5.57	54	32
San Francisco	2.00	6.22	6.33	56	40
San Jose	1.08	5.18	4.73	56	30
Fresno	.50	2.09	2.84	60	30
Independence	....	.52	2.75	38	4
San Luis Obispo	1.67	5.52	4.73	62	36
Los Angeles	1.18	3.33	3.74	60	40
San Diego	.38	3.45	2.25	62	40

T means trace.

Corn, Eastern Yellow, blk	1.55@1.57¼
Corn, Egyptian White	1.55@1.57½
Barley, Feed	1.22½@1.27½
Shipping and Brewing	1.26¾@1.27
Oats, White	1.55@1.60
Oats, Red, Seed	1.35@1.45
Oats, Red, Feed	1.25@1.35
Millet	3@3¼
Flax	6@6½
Rye	1.50@1.60
Sunflower	5@5½

FEED STUFF

Alfalfa Meal, car lots	14.00@14.50
Bran, ton	27.50@29.00
Feed Cornmeal, ton	38.00@38.50
Cracked Corn	38.00@38.50
Rolled Barley, ton	25.50@26.50
Rolled Oats, ton	37.00@37.50
Middlings	32.00@33.00
Shorts	28.50@29.50
Oilcake Meal	36.00@37.50
Cocoanut Oilcake Meal	23.00@24.00

Citrus Fruit Market

LOS ANGELES, Dec. 22, 1914.

The orange market is not quite so strong as last week, caused in part by liberal shipments and weather which prevents free handling of fruit when it arrives. A little southern fruit has gone forward from the southern end of the state, but most of shippers in the south prefer to wait until more perfect ripening of the fruit. It is probable two weeks will intervene before any general shipment. Tulare and Butte Counties will have practically everything off the trees before January 1.

Lemons are still low, although quotations are slightly above last week's. Importations are being lessened and California is shipping practically none at this time. The fruit now coming from the Mediterranean aggregates only about 35,000 boxes. On this date last year there were 175,000 boxes.

Shipments

Shipments of oranges from Southern California to date since November 1, 1914: 787 cars, lemons 440; total 1227. Last year, same date, oranges 724, lemons 190; total 914. From Tulare County this season, oranges 3494, lemons 81; total 3575. To same date last season: Oranges 3505, lemons 11; total 3516. From northern counties: Oranges 383; last year, 301.

CULTVATOR FRUIT MKTS ....

NEW YORK, Dec. 21.—Thirty-four cars navels, one Arizona navels, three cars California lemons sold. Market lower on California navels and lemons. Higher on Arizonas. Raining.

NAVELS—	Avge.
Prize, imp.	$1.95
Prize, imp.	1.95
Lotta	1.75
Craig-y-Nos, C. C. Lindsay	2.35
Kaweah Chief, C. C. Lemoncove	2.50
VALENCIAS—	
Playmates	$1.25
ARIZONA NAVELS—	
Desert, imp.	$2.60
Tonto, imp.	2.20
ARIZONA (HALVES)—	
Desert	$1.95
Tonto	1.45
CALIFORNIA LEMONS—	
Hiddendale, E. C. U. Ex	$2.15
Pennant	2.15
Lily	1.80
Dan Patch, A. F. Ex	2.20
Pony	1.90

BOSTON, Dec. 21.—Twenty-two cars oranges, two cars lemons sold. Snowing. Market easier on oranges and lemons.

NAVELS—	Avge.
Egnaro, C. C. Lindsay	$2.10
Forget-Me-Not, T. C. Pomona	2.30
Mars, Amer. Ft. Dis	2.45
Heart, Merryman F. L. & L. Co	2.35
Pearl	2.30
Sunflower, Foothill O. G. Co	2.00
NAVELS (HALVES)—	
Homer	$ .90
LEMONS—	
Rey	$2.40
Whittier	2.45
Pico	2.00

PITTSBURGH, Pa., Dec. 21.—Eight cars navels, two cars lemons sold. Seventeen cars Floridas sold. Floridas averaged $1.45. Cold.

NAVELS—	Avge.
Redbanks	$2.30
Sunflower, Foothill O. G. Co	1.85
Vallevista, S. C. Lincoln	1.85
LEMONS—	
Evergreen, Or. Tustin	$1.20
Lemon Heights, Or. Tustin	2.35
Hill Crest	2.00
Evergreen	1.50

CLEVELAND, Dec. 21.—Eight cars navels, one lemons sold. Market is easier, especially on large size navels. Steady on lemons. Cold, stormy. Eight cars Floridas sold, averaging $1.50.

NAVELS—	Avge.
Mid-California, T. C. Porterville	$2.05
Mid-California, T. C. Porterville	2.00
LEMONS—	
Oriole, F. C. Fillmore	$1.65

ST. LOUIS, Dec. 21.—Clear and cold. Streets icy. Market is easy account weather. Eight cars navels, one car lemons sold.

NAVELS—	Avge.
Mid-California, T. C. Porterville	$2.20
Sphynx, C. C. Lindsay	2.30
State, T. C. L.	2.25
Egnaro, C. C. Lindsay	2.25
LEMONS—	
Airship, F. C. Fillmore	$1.75
Oriole	1.50

PHILADELPHIA, Dec. 21.—Five cars navels, one car lemons sold. Raining. Market is declining on navels, advancing on lemons. Fifty-five cars Floridas selling here today.

NAVELS—	Avge.
Craig-y-Nos, C. C. Lindsay	$2.30
Heart, Merryman	2.45
LEMONS—	
Victor, O. K. Etiwanda	$2.75
Crest	2.50

CINCINNATI, Dec. 21.—Cold. Market declining on lemons, Floridas, also on large sizes navels. Sold one car navels, one car lemons, fourteen cars Florida oranges, one car grapefruit. Florida oranges averaged $1.60; grapefruit $1.00 to $2.00.

NAVELS—	Avge.
Gateway, C. C. Lemoncove	$2.10
LEMONS—	
Arab, S. D. San Dimas	$2.00
Greyhound	1.60

APPLE CULTURE

(Continued from Page 663.)

with an external irritant. Black Leaf 40 and other tobacco products, soap solutions, lime sulphur, and miscible oils are the most useful of the external iritants.

Spraying

To secure the best results from spraying requires a good pressure pump, and the extension rod eight to ten feet in length, equipped with an elbow coupling and a good nozzle. For general orchard work, a driving spray nozzle is more desirable than any type of mist spray nozzle. Under high pressure, and with a driving spray, every crevice and angle of the tree will be filled with the spray. While spraying, it must be borne in mind that only those portions of the tree sprayed with a fungicide are protected against the ravages of fungi; only those portions of the plant coated with poison, when consumed by an insect that chews and swallows its food, will kill the insect; and only those soft-bodied sucking insects are killed that are actually coated with the spray.

Thinning the Fruit

In order to secure well-formed fruit of uniform size, it is necessary to remove by hand as many of the young apples as we judge necessary to permit the remaining ones to develop to a good commercial size. With the fingers, or a good pair of thinning shears, remove all the diseased, wormy or otherwise damaged or mutilated fruit. Also thin to one apple to each alternate spur, if the set of the fruit is very heavy; otherwise leave one apple to each spur. Where fruit only sets on a portion of the tree, two apples may be left on each spur, provided the bearing spurs are not too close together. The bearing spurs should stand at least six inches apart. At the point of contact the color of a red variety will be rather light. Yellow apples mature much better, since the color of the fruit develops more uniformly. A serious objection to two apples on a spur is the loss from the codling moth, the point of contact forming an ideal place for the worm to force an entrance into the fruit. The worm has a habit of eating into each, perhaps to take his choice by flavor, ruining both specimens.—W. H. Lawrence, Arizona Agricultural Experiment tSation.

POULTRYMAN'S OPPORTUNITY

(Continued from Page 662.)

breed and perfect, being sacrificed this fall and winter. This war is causing feed to advance in price, but it will also cause eggs, poultry, and practically all other food products to advance in proportion. Poultrymen will be inclined to become freightened at the high cost of grains and sell off their stock so close that their business will be crippled this winter and next season. The price of eggs is going to be high beyond a doubt. The question with you ought to be, "How to get the egg." There will be a great demand next season for eggs and stock for breeding purposes. Our advice is not to decrease your flock in size so that your business will be crippled this winter or next season.

We have harvested the greatest grain crops we have had for years. Beef, mutton and pork are scarce and high and are rapidly advancing in price and continually getting scarcer. The world must depend upon the United States largely for its food stuffs. One of our own Missouri packing plants has received an order from Canada within the last few days for a million pounds of dressed poultry. Some of this we understand is for export to England. Take courage, my friends, for if I am not mistaken the greatest opportunity that ever offered itself to American poultrymen lies before you within the next two years. It will take these warring nations several years to recover from the effects of the war even if it should close now.

We do not advise overdoing the thing. We would not keep a lot of surplus males not fit for sale or use as breeders. Do not keep a lot of drones, or deadbeats, or a lot of old hens that have outlived their usefulness. Get rid of all dead weight but do not become unnecessarily alarmed and sacrifice a valuable flock which is almost certain to make you good money before the next season has closed.—T. E. Quisenberry, Director, Missouri Poultry Experiment Station, Mountain Grove.

The next meeting of the Los Angeles County Horticultural Society will be held at No. 237 Franklin Street, Los Angeles, Tuesday evening, January 5. It has been planned for the future, to have a paper read on a special subject. Mr. J. M. Grant, county forester of Orange County, will start these special features at the next meeting with a talk on Arboriculture.

"MOTHERHOOD"

We referred last year to a most beautiful calendar issued by the [illegible]-Bergtholdt Company of Newcastle. It has occupied the place of honor in this office during the last twelve months and is now to be replaced by another even more beautiful, a genuine work of art. It is entitled

"MOTHERHOOD"

"Not all great deeds that men have done
Not all the world's wisdom understood
Can match the laurel she has won
The wondrous crown of Motherhood."

If interested in deep well pumping you can have a copy of this book by writing for it. It contains information about the POMONA DEEP WELL PUMP, and also valuable data on irrigation subjects. When writing ask for "Catalogue No. 54C," and state the depth of your well and its location.

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is of the plunger type with reciprocating plungers, traveling in opposite directions, the one with a slow up-stroke, the other with a quick down-stroke, and a substantial "lap," thus having the descending plunger in place ready to receive and carry its load before the ascending plunger has reached the end of its stroke, traveling a substantial "dead" distance together, the one receiving, the other giving up its load gradually. Cylinders, valves and all other parts are made of the best materials that money will buy, and are built to stand up under heavy deep well lifts and to give years of satisfactory service.

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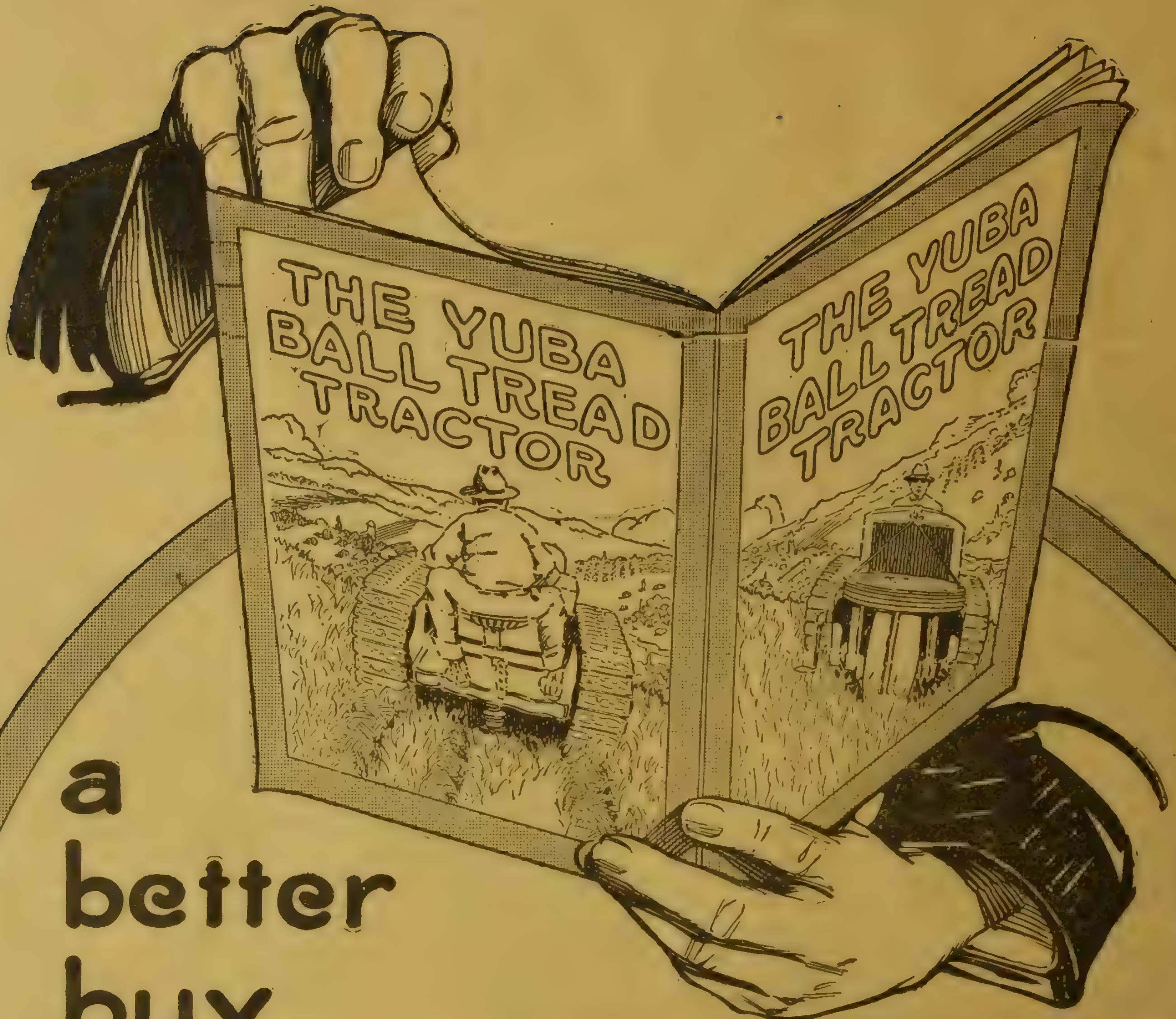
C. A. Cheadle, Mgr., Los Angeles Branch, 1235-37 E. 6th St., Los Angeles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CA

CALIFORNIA CULTIVATOR

Rural Californian combined with California Cultivator

An Illustrated Weekly Magazine, Devoted to the Rural Home and Ranch

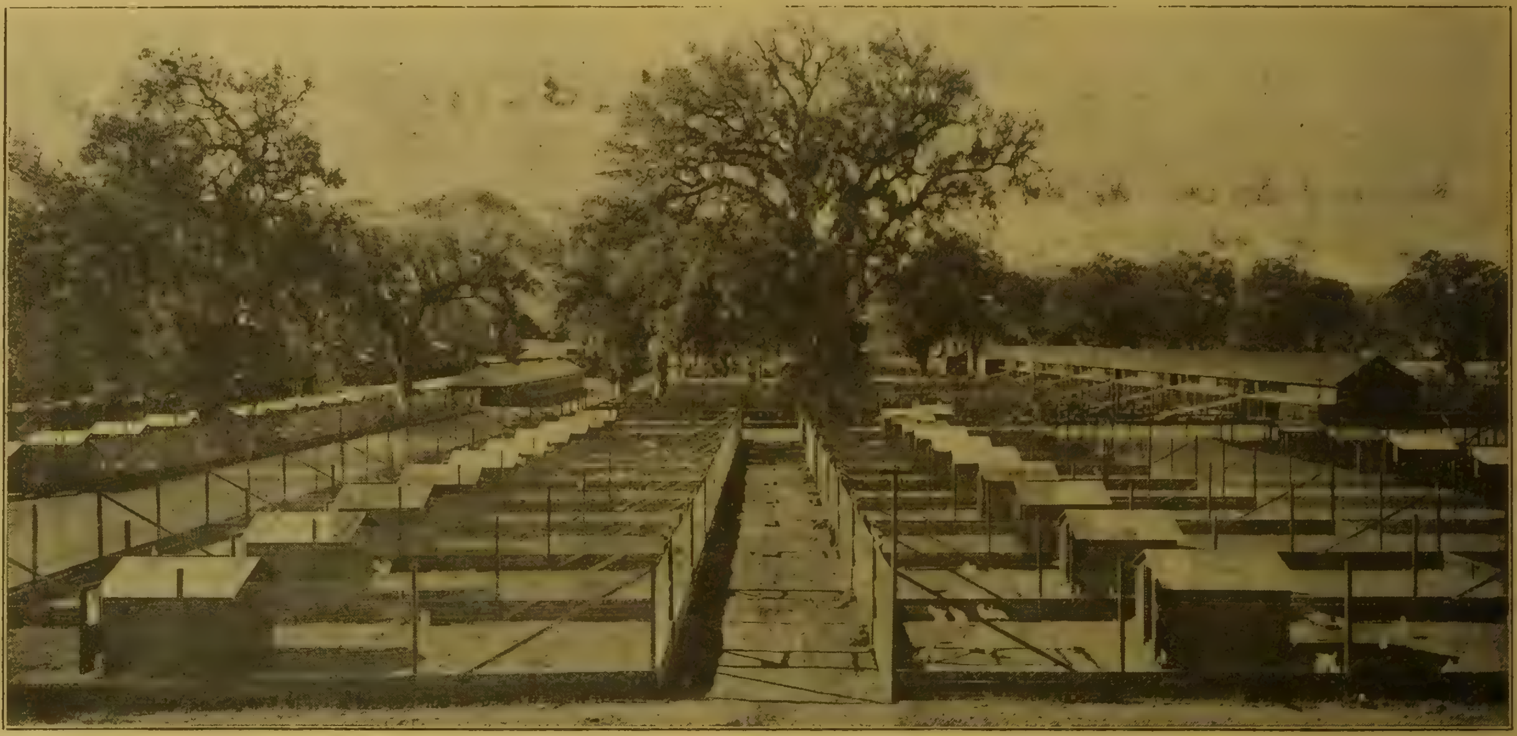
LOS ANGELES December 31, 1914 SAN FRANCISCO

Citrus Experiment Station Located

Riverside Secures the New Experiment Station, Provision for Which Was Made by the State Legislature Nearly Two Years Ago. This Engraving is of the Present Station Building, also at Riverside

THE CULTIVATOR POULTRY BOOK

—Off Press in January



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California Cultivator

Rural Californian combined with California Cultivator

Vol. XLIII No. 27 LOS ANGELES: THURSDAY, DECEMBER 31, 1914 One Dollar Yearly

Riverside Secures Experiment Station

Point Some Two or Three Miles East of the City of Riverside Chosen. Present Headquarters will be Occupied Until New Buildings are Constructed. Over 400 Acres in the Plot, Much of Which is Hill Land and of Little Value Except as Experimental Grounds for Hardy Trees. There are Approximately 230 Acres of Fine Soil. $125,000 Will be Shortly Spent for Buildings and Improvements

FOR two years the search has been on for a site for the Southern California citrus experiment station. There was no dearth of sites for there were scores of them offered. The state legislature of 1913 had appropriated $60,000 for the purchase of the site and $125,000 for permanent improvements. The scores of offerings were soon narrowed down to a half dozen or less and these were reported upon by the advisory committee some months ago. The board of regents with whom final decision rested was deliberate however and for the past few months it has been generally known that the decision rested between Riverside and San Fernando. On Tuesday, December 22, final action was taken when the regents by a vote of 14 to four decided in favor of Riverside.

The site chosen comprises 477 acres some two or three miles east from the business part of the city of Riverside. The appropriation called for 200 acres of good soil, and more than that amount, or about 236 acres, is excellent soil of good depth. Riverside people guarantee a flow of 120 inches of water to the land. The hill or rougher land will afford opportunity for building sites, landscaping and testing grounds for various forest trees and shrubs while the more than 200 acres will give all the station will require for experimental purposes for years to come. The experimental work will not be confined to the citrus family, for while it has been termed a "citrus" station it is known that its scope will include practically all subtropicals. Its work has not been fully outlined but we know Dr. Weber's ambition is to make of it a great educational center where advantages offered nowhere else in the world may be had.

The present station at Riverside has but few acres surrounding the headquarters, a photo of which appears on the cover of this Cultivator. But for a dozen or more years certain fertilizer experiments have been conducted which will be continued till determinations are made. Also connected with the station is the pathological laboratory at Whittier. The large staff of scientists and experimenters is now fully organized and ready for the new station grounds. Dr. Herbert J. Weber is at the head of this staff. Californians have already sized up Dr. Weber as a doer of things large and will watch with satisfaction the work which will now be pushed.

We congratulate Riverside. It has fathered and mothered the citrus industry since its foundation. It is now generous to the state for the tract sold to the state for $55,000 is rated at double that value. The tract is known to be comparatively frostless and has typical citrus and subtropical conditions.

What the Other Fellow is Doing

Dr. Leroy Anderson Writes for Cultivator Readers of Some of His Observations on Other Folks' Ranches

LAST May when I was driving out southwest of Gridley in Butte County, I was told by more than one farmer whom I met that August Gattiker was one of the best farmers in the community. Accordingly I called upon Mr. Gattiker and found his operations to be mainly in this wise.

HOUSE AND PART OF GARDEN—TOMATOES IN FOREGROUND

He has 20 acres of a sandy loam soil, 14 acres of which are in alfalfa, five acres in peaches, chiefly cling for canning, and one acre for house and garden. His barn takes so little space from the cultivated area that he doesn't count it. And his house may be considered in like manner because fruits or vegetables grow on every side and close up, and attractive setting, too, as shown in the picture. Mr. Gattiker has owned the place four years, having purchased it as rough land, and he has leveled and planted it and constructed all the improvements. The original cost of the land including water right was $135 per acre, and he came with just enough cash to cover the purchase price, $2700. But of course he did not pay it all down for that would have left him nothing for improvements. However, in four years he has paid for the land, planted it all, put up the buildings, equipped the place and now has everything paid for and $600 cash in the bank.

As to buildings, his barn cost $500. It is 40 feet by 56 feet with hay storage in the center 24 feet by 40 feet and a shed on either side 16 feet by 40 feet. One side stanchions 13 cows and the other accommodates the three horses and the farm implements. The gutter behind the cows drains into a barrel just outside, and all liquid manure is collected therein. It is dipped from this barrel into another on a sled and hauled where needed. A hole at the bottom of the barrel lets out the liquid which is spread by means of a board fixed just beneath the outlet. This saving of fertilizer is indicative of a prosperous farmer if there were nothing else about the place to signify it.

The house was formerly the school house diagonally across the corner. The district became prosperous enough to build a new one and Mr. Gattiker moved the old one over and fitted it up for his residence at a very small cost.

A main ditch of the Sutter-Butte canal runs along one side of the ranch and the seepage from the ditch is such that very little surface irrigation is needed. The soil is of such a texture that it carries water readily and the ditch being full throughout the summer there is little need of applying more moisture. My recollection is that Mr. Gattiker said he does no irrigating at all, but any time during the year one will find moist earth just below the surface. He pays the water rent of one dollar per acre and lets the water go by.

BARN 40 BY 50 FEET, COST $500. ON 20-ACRE RANCH

The alfalfa is harrowed thoroughly every spring with a spring-tooth harrow, an aid in conserving moisture and an insurance for clean hay. A small area of green forage is grown. In May an acre of barley and sorghum was about ready to cut. The sorghum would make two more crops of forage during the season.

The chief market crop is cream from a dozen good cows. However in 1913 there were 25 tons of alfalfa hay to sell beside what the cattle and horses needed. Mr. Gattiker thinks he would be better off had he substituted alfalfa for his five acres of peaches. The sales of peaches in 1913 amounted to $250—not bad for so young an orchard. But the trouble is that now, as they are becoming profitable, the trees were hard hit by "sour sap" last winter and many died.

(Continued on Page 681)

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of experience in the growing and handling of citrus nursery trees gives the buyer the advantage of starting out RIGHT, thus avoiding disappointment at the end of four or five years' labor in bringing the young orchard into bearing.

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right, grown right,
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Citrus and Tropical Fruits

AGRICULTURAL LIME

Written for California Cultivator

By P. L. McCreary

WHAT can be done to secure potash for 1915-16 if the European war is to continue? That is a question which is interesting thousands of Americans today and is a particularly pertinent question as related to the citrus grower.

Outside of Germany there are practically no deposits of potash in commercial quantity. The importation from Germany is cut off by reason of the war, no shipments having been reported since the first of September. Naturally the supply in this country has already been brought down to a very low point.

Now the successful production of citrus fruits is very dependent on the supply in the soil of readily available potash. The old theory that our soils in Southern California were so well supplied with potash by nature that the application of more potash would not be necessary has been largely disproved by actual practical experience in the field. The application of water soluble potash (commercial potash from Germany) has proved highly profitable to the growers and its use has been steadily increasing during the last few years.

It is then a question of the availability of the potash in the soil that influences the production of the crop, and it is for the purpose of pointing out to the citrus grower a way to render the potash in the soil available to plant life, and overcoming for the time being the potash shortage, that this article is written.

The general effect of the liberal use of lime (carbonate of lime) on the soil is well known. It is not necessary then to enlarge in this discussion on the beneficial effect brought about by the use of lime on the tilth of the soil—the increased action of soil bacteria, the better growth and decay of cover crops and the generally increased availability of the plant foods in the soil or which are added to the soil—all these points and many others have been proved time and time again by the various agricultural experiment stations, and these facts alone are sufficient to make liming a profitable investment.

There is another effect, not so generally known perhaps, and that is that the use of lime by a chemical reaction in the soil changes the insoluble potash over to a form that is soluble and thus available to plant life. This is particularly true in those cases where the potash of the soil is of felspathic or granitic orgin, as is the case with most of our Southern California citrus soils.

It will be interesting in this connection to note the following abstracts from agricultural station bulletins:

E. H. Jenkins and E. M. East, Bulletin 163, Connecticut agricultural experiment station: "The element calcium is a necessary constituent of plants; but as almost all soils contain it in sufficient amounts for their needs, the action of lime is not like that of a direct fertilizer. Indirectly, however, it is an agent by which insoluble potash is changed to a form available as plant food."

H. J. Patterson, Bulletin 110, Maryland agricultural station: "Lime has not only the effect of aiding in the formation of unions of potash which will be held in the soil, but it also has the ability to liberate potash from combinations which are locked up and unavailable to plants. This is particularly marked when lime is applied to land containing fragments of feldspar."

W. B. Ellett, Bulletin 167, Virginia agricultural experiment station: "Nearly all soils, especially clay soils, contain more or less of the plant food potash in an insoluble form so that plants cannot use it. Lime acts upon this insoluble potash and liberates it, making it available for the growth of plants, or, as it might be put, palatable to the plants."

These statements, official as they are, and backed by extensive experimentation, surely point out the way of overcoming the shortage in potash. We do not of course argue that this practice of liberal liming can be carried out year after year without depleting to some extent the soil fertility. What we do maintain is that the use of lime in the situation which confronts us today when times are hard and the potash supply largely cut off will be of great benefit to the grower.

It simply means drawing on the reserve supply of plant food in the soil and returning these fertility elements to the soil in the form of fertilizers or fertilizing elements later on when financial and crop conditions revert to normal.

As a rule a good type of agricultural lime may be cheaply obtained. It should not cost over say $7.00 per ton, delivered to shipping point. Used at the rate of one ton to the acre, this soil treatment should be easily possible for practically all growers.

We also have before us a few general summarizations from Bulletin 48, bureau of soils, being results of 13,000 experiments on 220 soils.

"As a rule the efficiency of complete fertilizer has been appreciably increased by the addition of lime."

"Complete fertilizer without lime gave 79 per cent increased crop yield."

"Complete fertilizer with lime gave 115 per cent increased crop yield."

"Lime has proven quite generally beneficial, being on an average more effective than both potash and phosphate."

"In the Atlantic and Gulf coast states, including Kentucky, Tennessee and Arkansas, for which a large number of observations have been made, and where the most of the important soil types have been tested, the soils with few exceptions respond in a marked degree to commercial fertilizers and lime."

Surely this is food for thought for the citrus grower, and it is a point which we believe has been given very little attention in this citrus section in the past.

The man who hitches his wagon to a star may be an "idealist," but he will go farther than the man who is driving a balky team.

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WE do not mean that all successful planting must be done by experts, but that expert information and advice should govern your planting.

What are the right varieties for your particular locality; the kind that will most likely yield the greatest profit (not now, but) when they come into bearing; what are the best methods of planting, pruning, irrigating, packing, marketing, etc.? These are points that should be determined by the experience of others.

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CANDIED-FRUIT MAKING AT LEGHORN

By Consul Benjamin F. Chase, Leghorn, Italy

Two of the six manufactories of candied fruits, citron, lemon, and orange (a specialty of Leghorn), were visited on July 1. The larger one employs between 35 and 40 men and women; the smaller one, 10.

The citron is received either fresh or in brine, generally cut in halves with the pulp stil in it, from Candia, Greece; Corsica or Calabria, in southern Italy. That in brine is in barrels of sea water. This water is drawn off and the citrons weighed and assorted, then placed in large hogsheads. Salt water is brought in tank boats from some distance out at sea and pumped direct into these hogsheads, which lie on their sides. The fruit is left thus until ready for final treatment and is preserved by the brine. This brine also acts as a purge and eliminates some of the acid of the fruit by absorption. The lemon and orange peels are received in the same way, except that the pulp has always been previously removed. All of the fruits are given practically the same treatment. The description herein is that observed in the treatment of the citron in the various processes through which it was being put.

Simple Processes Employed

The citron after being some time in the hogsheads of salt water is boiled in fresh water, and the central pulp is torn out by women and the rind or peel thrown into a tank of fresh water. The peel is afterwards placed in a syrup of about four per cent sugar, which is at the boiling point when the peel is put in, but is allowed to cool. It is thus treated eight or nine times, each time being placed in a stronger syrup, until the last is about 35 per cent of sugar. The containers for this syrup in one factory were wooden barrels and in the other earthenware. The peel is then put into copper vats or kettles and syrup put in and the whole boiled for from an hour to an hour and a half. More sugar is added to bring the quantity up to the standard required. It is then placed on wire netting to drain and dry.

If drained citron, as it is called, is the product desired (much of this being made for the British Islands), this is the final process. If candied citron is desired the peel is again boiled for a like period in a strong sugar solution. It is then, after cooling, draining, and drying, packed for export. This work is also done by women.

Imports Sugar—Exports Candied Fruit

White crystallized sugar, chiefly imported temporarily for that purpose from Austria, is used in all of the processes. The candied citron contains 72 per cent of sugar. The use of Egyptian sugar was common some years ago, but none seems to be imported at Leghorn now either temporarily or otherwise. The sugar is kept in storage under direct government control and issued to the manufacturer as desired. The customs authorities also keep officials in the various plants to check up the use of the sugar, as that used does not pay a duty, the candied fruit being manufactured for the export trade. The small amount used in Italy, which is stated does not exceed 1,000 kilos (or a metric ton of 2,204.6 pounds) a year, is employed in the manufacture of sienna cake. Between 80 and 90 per cent of the product manufactured is citron, the balance lemon and orange peel.

CITRUS CANKER

To secure information as to the citrus canker situation we wrote the Texas state department of agriculture at Houston, knowing this serious trouble had secured admission to that state. Mr. Ed L. Ayers, plant pathologist, answers as follows:

In Texas citrus canker is confined to that portion of the gulf coast known as the Satsuma section of the Texas citrus belt. It includes the territory south of Houston, from Port Arthur on the east to Bay City on the south and west. This section has many localities in which the citrus canker is not found but it is scattered at various places well over the territory mentioned. There is one infestation at Kingsville which is isolated and has been left at the request of the United States government, so that their specialist may study the nature of the disease. The disease has not been found in the round orange section, which extends from Kingsville south through the lower Rio Grande Valley. This round orange belt is larger than the entire citrus belt of certain southern states.

The citrus canker is easy to control on the Satsuma, and as it is only found in this section of Texas, the situation is very encouraging. It has been spread about on the citrus trifoliata to which it seems indigenous.

The following procedure has been adopted by us for its control:

1. Destroy all infected citrus trifoliata.

2. Destroy all grapefruit and other badly infected host plants not easy to give special attention.

3. Spray infected plants and those surrounding with 6-8-50 Bordeaux mixture.

4. Carefully remove and burn all infested leaves, wood and fruit.

5. Spray every ten days with 6-8-50 Bordeaux, or as often as weather will permit.

6. Keep close observation after treatment and remove infected leaves that may not have had the disease sufficiently developed at first to make it noticeable.

Together with the above outlined measures all precautions are taken to keep from spreading the disease about by adopting antiseptic measures.

The chief cause of alarm is the rapidity and ease with which the disease is spread.

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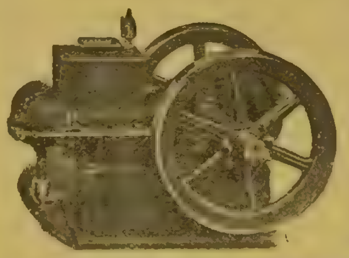

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THE FAMILY ORCHARD

Written for California Cultivator
By M. Sharpe

A GREAT many people not engaged in growing fruit commercially wish a small orchard for family use. Such a man may have little or no knowledge of the different varieties best adapted to his wants, and either plants what some traveling agent may tell him to plant or the varieties that are used most extensively for Eastern shipment, they being better known but not always so desirable for the family orchard, owing to the lack of proper jellying and canning qualities, their value as shipping fruits being in a great many cases due to size, color and carrying quality.

Another mistake in planting an orchard of this kind is that one not acquainted with fruit varieties is liable to plant fruits that ripen too near the same period. The thing to strive for is then to plant an orchard of fruits best adapted for eating out of hand and for general home use, and which will extend over a long ripening season, which here in California, if proper attention is given to selection of kinds, means fruit for the home almost every day in the year.

Although engaged in the fruit business commercially, I have experimented with a great many varieties of new and imported fruits, many of which have proved worthy and are to be highly recommended both for shipping and home use.

Plums

The Japanese varieties of plums are not generally used for table purposes with the exception of the Satsuma, a red-fleshed plum and good for cooking. Of this species I would suggest, in order of ripening, Beauty, Santa Rosa, Formosa, Climax. Wickson, Gaviota and the Kelsey. These varieties are excellent for table purposes and will extend over a ripening season from May to September.

Of the European class for table purposes the Clyman, California Blue or Tragedy, Peach Plum, Jefferson, Yellow Egg, Green Gage, Pearl, McLaughlin and Sugar are the more common kinds, to be had of most any nursery.

Mr. Leonard Coates of Morgan Hill is now propagating in his nursery many recent importations from Europe, the majority of which I have thoroughly tested out and have found many of them to be highly satisfactory, not only for home use but for shipping purposes.

Of these recent importations or plums I would suggest for the table and for shipping also, the following: Blue Rock, Czar, Mallard, Swan, Heron, Denbigh, Femmonzi Late Orange, Decaisne Autumn Compote, Monarch, Admiral, Denniston's Superb, Guthries Late, Archduke, President and Primate.

To those who wish a sour plum the Curley and Black Diamond are sour enough. The King of the Damsons and the White Damson are good for this class of plum. For a very late plum the Uncle Ben will be ripe for your Thanksgiving dinner.

The above-mentioned varieties are all to be recommended for cooking purposes also. The Czar and Blue Rock are excellent for jellies and preserves, and the Uncle Ben makes excellent plum jam and is a very delicious all-purpose plum. The Americana or the native type of plum grown in the East, does not seem to do well here.

Of the freestone peaches for the table the Mayflower, Alexander, Opulent, Duke of York, Carman, Belle of Georgia, Foster, Crawford, Decker, Australian Saucer, Fitzgerald Niagara, Morris White Strawberry, Salway, Krummel's October and Bilyen's Late.

Peaches

Of the clingstones, McDevitts, Philips, Orange, Tuscan, Sims, Indian Blood and Red Bird are very good. The Red Bird cling is one of the most beautiful peaches grown.

The best canning freestone peaches are the Crawford, Muir, Lovell, Elberta and the late varieties.

Pears

Of the pears in order of ripening, Madeline, Doyenne de Ete, Wilder, Bartlett Howell, Bosc, Comice, Conference, Glout Morceau and Seckel are to be preferred. Most pears can be preserved but the Bartlett is generally used for that purpose.

Cherries

For the cherries, Chapman, Tartarian, Bedford Prolific, Guigne Annonay, Early Rivers, Doctor Flynn, Hoskins, Bing, Schmidt's Bigarreau, Royal Anne and Centennial are excellent and most of them will do for cooking.

Apples

As to the apples for the family orchard the list is very long and there are so many good apples it is difficult to state which varieties would be preferable in California, as we have so much variation in locality. In some parts the winter apple becomes a summer apple; in many parts of California the apple is not a success at all, and in others is preeminent. Therefore, the main thing is to obtain varieties adapted to the locality where one may dwell. The Delicious, Grimes Golden, Winter Banana, King David, Gravenstein and Spitzenberg are all high-quality apples.

Persimmons

In planting persimmons the Hachiya, Goshio, Tanenashi and Tamopan are the best. The native wild persimmon of the United States is very fine after having been frosted. There are also some hybrids between the wild native and the Japanese that are to be desired. T. V. Munson of Dennison, Texas, has developed three new hybrids which are very fine.

Pomegranates

For pomegranates, Spanish Ruby,

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Papershell, Sweetfruited and Sin Pepitas are the best. The Wonderful is a beautiful fruit but sour.

Oranges

The orange is too well known to be mentioned, although there are varieties grown in the southern states that are said to be exceptionally good, such as Parson Brown, Lue Gim Gong, Majorca and Pineapple.

CONTROL OF PLANT LICE

Dr. A. W. Morrill, entomologist of the Arizona agricultural experiment station, writes:

"I have received a clipping from a Douglas paper in which mention is made of injury to fruit and shade trees in the city of Douglas by species of plant lice or aphis. I have not received specimens of these insects, but from the description given I have no doubt that they are true plant lice. Plant lice may be controlled by spraying with several insecticides, among which are (1) nicotine extract and soap, (2) whale oil soap, and (3) common laundry soap. These are listed in the order of preference. 'Black Leaf 40,' 'Nikoteen' and 'Tobacine' are trade names for three of the best known concentrated tobocca extracts. The first named is used in Arizona as a sheep dip and is consequently more easily obtainable than the other brands. It is guaranteed to contain 40 per cent nicotine and is retailed in gallon cans at $12.50 and in half-pint cans at 85 cents. While 'Black Leaf 40' is especially mentioned herein, other brands of concentrated nicotine of equal strength may be substituted in the recommendations which follow. A teaspoon of this concentrated nicotine compound is sufficient for one gallon of spray. Soap should be used with 'Black Leaf 40' at the rate of one-half ounce in a gallon of spray. This is not primarily for the insecticidal value of the soap, but for the purpose of giving the spray better penetrating and sticking properties. Whale oil soap, hard laundry soap, or one of the soap powders may be used in the foregoing spray mixture. The first is the more effective, but has the disadvantage of an unpleasant odor. The soap should be dissolved in a small quantity of hot water, after which sufficient water is added to make one gallon. Add to this the teaspoon of 'Black Leaf 40.' This insecticide is not always immediate in its effects, but the thoroughness of the work can be judged 24 hours after the application is made. When whale oil soap is used, two ounces should be used in a gallon of water and when laundry soap or soap powders are used three or four ounces should be used in a gallon of water.

"For applying the insecticide to shade or fruit trees more than eight feet in height, I would advise the use of a 'barrel sprayer' or a horizontal hand pump. The latter are slightly more expensive, but are always to be preferred when there is any considerable amount of work to be done. With either one of these types of spray pumps, a 25-foot lead of spray hose is needed, also an eight or ten-foot brass-lined bamboo extension rod, with a nozzle and cut-off. For combating plant lice on small trees and for garden plants, a small hand sprayer is recommended. These are made in different styles and are known as 'Bucket,' 'compressed air,' and 'knapsack' sprayers. They cost from $3.50 to $15.00 for complete outfits. For small gardens the 'bucket' pumps are especially recommended on account of their comparative cheapness. The equipment needed consists of from two to four feet of three-eighths inch rubber hose (the longer length is needed for the 'knapsack' sprayer), a three-foot extension rod and a nozzle adapted to throw spray at right angles to the extension, enabling the operator to reach all parts of the plant. The extension rod should, preferably, be of aluminum. This costs 25 cents per foot, but gives far better satisfaction than the heavy gas pipe extensions. The 'cyclone' or 'side cyclone' nozzle is preferable for garden work. These are right-angle nozzles of practically the same design costing about 60 cents each.

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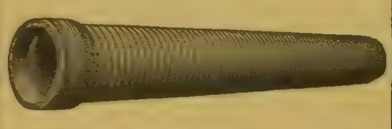

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General Agriculture

THE CARE OF AN AUTOMOBILE

IN considering the car upkeep question, three things have to be considered, the driver, the car, and the road. A reckless driver may ruin a good car or bad roads may do the same, in spite of careful running. While the writer realizes that it would be advantageous to have upkeep figures given, it would be of no practical value as the cost of upkeep is not identically the same, even with the same make of car, or even the same driver, as roads and weather cut a big figure in fuel. It is well known that driving into the wind takes more gas than when there is none and the harder the wind the more gas required.

Different stretches of road also require different amounts of gas. However, more gasoline is wasted by faulty engine adjustment than any other way. Too rich or too poor mixture in the carburetor, missing cylinders, leaking or wrongly timed valves, and carbon in the cylinders all are wastes of power.

How to Test the Mixture

One of the best ways to test the quality of the mixture is to turn the engine over a couple of imes with the switch off and the throttle open, remove one of the spark plugs and hold a lighted match to the hole. If the mixture is too poor it will burn weakly or not at all, or if too rich will burn with a yellow colored flame. A mixture which is about right will explode, not burn.

Care of Carburetor

A carburetor adjusted for summer may not be just right for winter, but when once set should be let alone. If there is still trouble it may be dirt in the carburetor, faulty ignition or carbon in the cylinders. A carburetor should be flushed out often and if there is much trouble with dirt, the gasoline should be strained through a fine-meshed smooth cloth.

How to Locate Cause of Trouble

When an engine runs after the switch is turned off or knocks in the cylinder while running, it is a pretty sure sign of carbon. The spark lever too far advanced will also cause knocks in the cylinder.

The only satisfactory way of removing carbon is to take the engine apart and scrape the cylinders with the steel carbon remover, which can be bought for the purpose.

This will take some time, but if done carefully and methodically will not be very difficult. Put everything aside in just such order that you can get it back in just the way it was before.

Poor oil or too much oil is the cause of carbon, and while it is necessary for the cylinders to have plenty of oil, too much is just as bad as not enough. Only the best grade of oil should be used. It pays in the end.

Valves

Valves generally have to be ground every 30 or 40 days if the car is used steadily. On some cars the engine has to be taken apart to do this; on others there are plugs directly over the valve heads, which may be removed to get at them. The edge of the valve head should be coated with valve grinding paste, which can be bought in tubes, and turned back and forth with a short motion till the edge of the part and the valve show bright all the way around. While doing this, repeatedly shift the valve around so as to grind evenly. Be careful not to get any of the paste in the cylinders, as it will injure them. Valves seldom get out of time, but if they do, they had best be adjusted by an expert. It is too particular a job for one who is not used to the work.

Ignition Troubles

Most ignition troubles are confined to dirty or improperly spaced spark plugs. Excessive oil or too rich a mixture causes fouling of the plugs and should be remedied. Engines with magnetos have less trouble than those depending on batteries. Batteries should not be allowed to fall below 20 amperes, all wiring kept from getting oil soaked, or chafed, as this will soon cut through the insulation and cause a short circuit, as will also oil if it penetrates the insulation. The space between the points of the spark plugs should be between one-sixteenth and one-thirty-second of an inch, so as to give a thick spark.

An Overheated Engine

This may be caused by driving too long on low, too late a spark, or too rich a mixture. A clogged circulation may also be the trouble. Loss of power may be due to a slipping clutch if a leather-faced clutch, and may be oil soaked or may need a new leather. Disc clutches have to be kept oiled.

All hubs, differential and gear case must be well packed with hard oil. A mixture of half cylinder oil and half hard oil is good for the gear case. The main thing required to get good service of a car is to keep the engine tuned up in good order, and use reasonable care in driving. Better go several miles around a very bad spot of road and save the wear and tear on the car.

Tires

As to tire service, the important thing is to have good tires to start with. A thick-treaded casing and the thickest red inner tube you can buy are good insurance against trouble. A small vulcanizer is a good investment as all small cuts in the casing and all ordinary inner tube punctures can be repaired and is a great saving. Tires must be kept inflated till they stand up, well rounded under the load, if you would prevent tire trouble.—Farm, Stock and Home.

DISINFECTION OF DITCH WATER FOR DRINKING PURPOSES

Wherever ditch water is used for drinking purposes, its use is always attended with more or less danger from typhoid fever and dysentery. This risk can be considerably reduced by treating the water with hypochlorite of lime or bleaching powder, which can be purchased in one-pound sealed packages from any drug store for about twenty-five cents per pound. Water in cisterns may be treated as follows:

For 5000 gallons, place one ounce of the bleaching powder (so-called "chlorid of lime") in a vessel containing approximately two gallons of water; stir rapidly for about one minute; allow it to stand for five minutes so that the insoluble part of the lime will settle to the bottom; pour the solution into the cistern containing the ditch water, and by means of a long paddle stir vigorously so as to mix the hypochlorite of lime thoroughly with the water. After 30 minutes, the water may be used.—Walter G. Sackett, Bacteriolgist, Colorado Experiment Station.

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Answers in this column by Dr. Wm. Petrie, 2714 South Harvard Blvd., Los Angeles, are without charge. For immediate mail answer remit $1.00. In writing questions give full symptoms or particulars of injury of animal.

Garget

I have a cow that for the past two years has given lumpy milk before calving. One-quarter of her udder became caked and swollen and remained swollen for some time after her calf came. What shall I do for it?—Subscriber, Snelling.

Congestion of the udder causes lumpy milk and is called garget. Thick blood and too much feed causes it. Give her a physic as soon as the lumps appear or before if you think best, and another a week later. Use one pound of epsom salts, half a pound of common salt and a large tablespoon of ginger. Dissolve all in two quarts of hot water and when cool give at one dose. The following powders given later will put her in good condition and pay well for your trouble: Powdered gentian four ounces, powdered nux vomica three ounces, bicarbonate of soda three ounces and farina eight ounces. Mix and give a tablespoon in the feed once a day.

Warbles

I have two cows that have what appears to be large lumps all over their backs. On top of each lump there is a scabby hole. Inside is a fat white worm about an inch long and three-eighths inch thick. Can you tell me what conditions cause them to come and how to cure them?—Subscriber, Gilroy.

They are what are commonly known as warbles. They come from the egg of the warble or heel fly (Hypoderma lineata). The eggs are deposited on the hair during the summer and when licking herself the cow takes them into the mouth. Once in the saliva they soon hatch and pass down toward the stomach. From there, it is said, they work through the tissues of the body until they reach the back and remain there until spring or warm weather when they come out and drop to the ground. They burrow into the ground a short distance where they soon develop into a fly again only to come forth to lay more eggs. To get rid of them squeeze them out even if you have to make the hole a little larger, then inject a little turpentine into the cavity and squeeze it out.

Wire Cut

I have a mare that was cut on a wire, just above the ankle, about the middle of September. The wound has almost healed but her ankle is still swollen and seems stiff. Will you kindly inform me what to do for it?—Subscriber, Snelling.

First put on a poultice of coarse bran wet with hot vinegar. Let it cool until you can just bear your hand in it before applying it. Leave it on over night. Then wash clean and rub dry. Then apply once a day a lotion made by dissolving one ounce of chloride of zinc in two quarts of water. The lotion will do more good if warm when applied. Do not warm the lotion in a metal dish; use earthen or granite ware.

Goat Fails to Breed

I have a three-quarter Toggenburg doe which kidded January 2, 1913, but since that time has failed to breed. Can you advise any treatment which will bring about the desired result?—Subscriber, La Jolla.

If her age is not against her then reduce her in flesh until quite thin and try the following powders: Powdered gentian two ounces, powdered nux vomica one ounce, sulphate of iron one ounce and farina enough to make eignt ounces. Mix and divide into 94 powders. Give one powder in the feed every night.

WHAT THE OTHER FELLOW IS DOING

(Continued from Page 675)

Most men on a 20-acre place would think it most profitable to do all the work alone, but on this ranch a man is employed the year round at the annual wage of $350, in addition to board and lodging. It looks as though this labor were a profitable investment for the returns in vegetables and small fruits appear to pay the wages. When haying and care of stock do not occupy his time there is always some profitable employment in the garden.

Presented in detail, the financial side of this small ranch is as follows:

Capital

Land—		
20 acres, at	$250	$5,000
Stock—		
12 cows, at	70	840
3 heifers at	30	90
3 horses, at	150	450
2 sows, at	20	40
80 hens, at	1	80
Implements, machinery	......	350
Total	......	$6,850

Receipts, 1913

Cream	$ 900
Calves	50
Hogs	200
Fruit—Peaches	250
Tomatoes	100
Strawberries	100
Chickens	50
Hay, 25 ton, at $10	250
Total	$1,900

Expenses, 1913

Labor	$ 350
Taxes	40
Water rent	20
Other expenses (estd.)	180
Total	$ 490

Summary of the above:

Receipts	$1,900
Expenses	490
Farm income	1,410
Six per cent on capital	411
Owner's labor income	$ 999

In other words, after deducting the usual rate of interest from the net receipts of the farm the owner has approximately $1,000 to pay him for his labor. In addition to receipts as listed, the eggs and vegetables exchanged in Gridley paid grocery and meat bills of the family for nine months. The family consisted of four adults (Mr. and Mrs. Gattiker, an aged father and the hired man) and two small children. The family likewise had what fruit and vegetables were needed on the home table. This man had from 20 acres $1,000 in addition to a goodly portion of the food supply for six people. When I lived in a city I made some calculation of what this actually means in comparison to a city man's salary. In rent of house and for supplies purchased which this rancher picked from his land, I paid in cash $800. In short, the labor income of $1,000 on this ranch is equivalent to a salary in the city of $1,800, or $150 a month. The city man may have more conveniences about his home than the rancher here described, but these are more than balanced by the freedom of life and action which are preeminently a rural asset.

One point more. I learned of another man in that section who purchased 30 acres of land similar to Mr. Gattiker's, and paid the same for it as this 20 cost. This man still owes $1,800 on his place, and says he can't make the payments. He works out a great deal, and in doing so possibly neglects his own place. Maybe it is the man at the helm after all that tells where the ship is to land.

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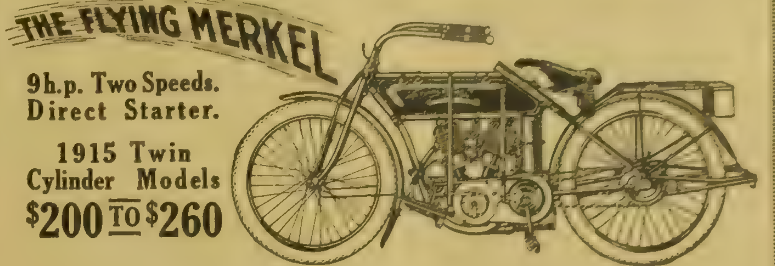

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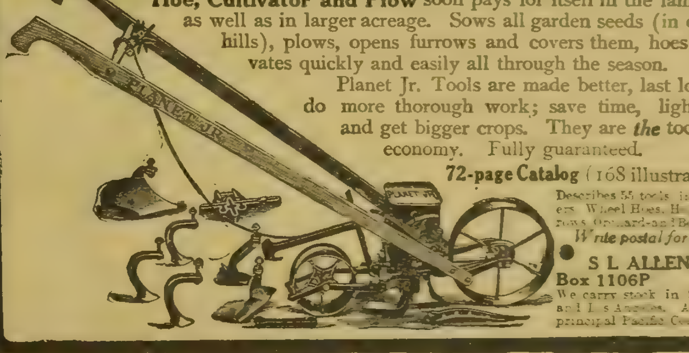

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HEAD DITCHING

Principles and Practices in New South Wales

THE object of head ditching is to supply a certain area of land with water for irrigation purposes. The dimensions of a ditch and the amount of water to be supplied should be the first consideration in connection with its construction. If the water is supplied only from one outlet, and a large area has to be supplied, the ditch must necessarily be a long one; and if, in addition, it is called upon to convey a large amount of water in a limited time.

Important Factors

Important factors are its size and the fall in the land through which it runs.

The first factor is, however, dependent almost entirely on the second. The greater the fall in the land the more the size of the ditch can be reduced.

Again, the service expected of a ditch must be governed to a great extent by the crop which it is intended to water. If the ditch is to be used for irrigating lucerne or fodder crops, it may be necessary to supply a maximum amount of water in a given time. If, on the other hand, it is required for the irrigation of fruit trees or vines, it will be necessary to irrigate by means of furrows—which requires the maximum of time in order that the land may have a chance to absorb as much water as possible during the irrigation, and insure the water soaking evenly over the whole of the area operated upon, a very necessary thing if uniformity in the matter of cultivation and subsequent growth of the crop is to be secured.

The Ideal Ditch

The ideal grade for a head ditch is about 12 inches to the mile—just sufficent to insure that the water will flow along its length without interruption. If the fall be greater there may be a tendency to scour out the sides of the ditch and difficulty would probably be met in drawing water off, since in order to get a satisfactory flow through the sluice boxes used in connection with the water distribution, it is necessary to steady the flow in the head ditch by means of checks. The steeper the fall the greater the number of checks required. The following figures, which have been prepared by Mr. F. H. Brewster, may serve as a guide, and may be taken as approximately correct:

Discharge of ditches having a fall of 12 inches per mile, and a side slope of 1 to 1.

Bed Width.	Depth of Water.	Discharge.	Acre feet in 24 hours.
2 ft.	1 ft. 6 in.	3.4 cusecs	6.8
2 ft.	1 ft.	1.5 cusecs	3.0
1 ft. 6 in.	1 ft. 6 in.	2.7 cusecs	5.4
1 ft. 6 in.	1 ft.	1.2 cusecs	2.4

The greater the fall the greater of course will be the carrying capacity of the ditches and vice versa.

A good maxim to follow in connection with the construction of head ditches is to err on the large side. Better a ditch too large than one too small; moreover, the large ditch has certain advantages which recommend it. In the first place the irrigator has something to come and go on in cases of emergency; and in the second place, when the ditch becomes partially choked with weeds, as is likely to be the case in a short time, the flow of water through the ditch is not lessened to such an extent as to interfere seriously with the proper irrigation of his farm.

With a fall of 12 inches to the mile a ditch not less than five feet on the top and 12 inches in depth below the surface of the soil, with side slopes of one to one, is recommended. A ditch of this cross section should carry from two to three cubic feet per second. Working this out roughly the amount of water supplied by such a ditch in 24 hours would be about four acre-feet, or four inches of water over an area of 12 acres. This should be sufficient to insure a satisfactory watering under ordinary circumstances. If the soil be light, in all probability more than this quantity of water would be quickly absorbed, but on the other hand in heavy clay country the soil would not be able to take any more than the quantity of water which such a ditch could supply in 24 hours.

These figures may be taken as a rough guide in connection with the construction of head ditches, for in the event of the fall in the land being greater than 12 inches to the mile, the flow may be steadied to whatever extent is desired by the provision of checks in suitable places. It should be borne in mind, however, that when the fall is less than 12 inches in a mile and it is not possible to increase the flow by raising the head of water in the channel supplying the ditch, the only means by which the amount of water can be brought to the normal figures given above is by increasing the size of the ditch itself.

Here again it is impossible to dogmatise, the circumstances varying so much in each individual case. The figures already given, however, as to the discharge of ditches of the various cross sections indicated, will perhaps be useful in this connection.

Making Head Ditches

Of all the methods tried on the various irrigation schemes in this and other countries, the cheapest way to make a satisfactory head ditch appears to be by means of a delver, an implement which is well known on all Australian irrigation settlements. The operations necessary to construct the delver ditch are as follows:—First of all the line of the ditch must be pegged out carefully. The earth to be taken out, a strip of about five feet wide, should then be plowed, the dead furrow being left in the center. The delver is then brought into use to remove or crowd out the plowed soil. In doing this care should be taken to push or crowd the soil from the first plowing well out so that after the second plowing (of the subsoil) it will be possible to bring out the soil from the bottom of the ditch and form a strong bank capable of holding the water it will be called upon to carry.

After the removal of the first soil the plow must again be requisitioned as above indicated to loosen the soil in the bottom of the ditch. It is only rarely that a third plowing and further use of the delver is necessary to deepen the ditch sufficiently for practical purposes.

It is generally necessary for the bank of the ditch to be strengthened by hand shovelling—the delver leaves a V-shaped ditch, and a bank with a feather-edged top. This may be altered by broadening the bottom of the ditch and putting the removed earth on the outer sides of the bank, thus strengthening it. Before widening the bottom in this way with the shovel it is always advisable to plow the sides of the ditch, thereby rendering the work of removal much easier.

Sluice Boxes

In this regard again a great deal depends on the purpose for which the ditch is to be used and the amount of water it is to carry. Taking the normal conditions referred to previously, 6 in. x 4in. boxes, 3ft. long, placed every 30ft. along the length of the ditch, should be sufficient for irrigating lucerne. In the case of trees or vines one box should be placed opposite each row. These boxes may be either 2in. x2in. or 2in.x3in. in aperture, according to the distance the water has to run in the rows and the class of soil to be supplied. With a short distance and stiff soils a small box would be sufficient—with a long distance and stiff soils the larger boxes would probably be necessary. In the case of more open sandy soils the large boxes would be necessary in any case in order to get the water to run any distance. As is well known, the sluice boxes are fitted with tin slides, by the lowering or raising of which the flow of water through the boxes can be readily regulated. Sluice boxes of this nature have not proved an unqualified success on the Murrumbidgee irrigation area, as it has been found almost impossible to altogether stop them from leaking without shovelling the earth behind the boxes. There is also a tendency for the water to creep along the outside of the boxes and gradually wash them out. This last trouble can, however, be minimized to a great extent by nailing strips of timber, 1in. x 1in., right round the perimeter of the box, about half way of its length—that is to say, under the center of the bank. These serve to break the flow or creep of the water, and prevent the tendency to wash out.

The leakage trouble cannot, however, be entirely overcome if ordinary boxes are used. Any number of suitable designs for water-tight boxes are procurable, but in every case they are expensive. It is considered that the most efficient system would be to install concrete sluice boxes, which could be made at a cost of approximately 5s. each. This is, of course, a matter of some expense, and in the case of most settlers on the irrigation area who are not too liberally supplied with cash at the present time, it is one of the things that can wait until the farms become reproductive. In the meantime, with care and attention, the ordinary boxes do well enough for all practical purposes.

Carrying Water Over Depressions

To carry water over depressions, what is technically known as a "fill" is required. That is to say, instead of digging the ditch out with a delver it is necessary to build the banks up well, taking little or nothing from the bottom of the ditch. Under these circumstances care must be taken to see that the made banks are particularly strong. Many ditches are capable of carrying the water for the first or second irigation satisfactorily, but they then fail owing to the bank subsiding or scouring. If a breakaway occurs the carting of earth to remake the bank is a labor of considerable difficulty and expense—moreover, the outrush of the water may do very serious damage to the farm before the flow can be cut off. This, of course, is a factor of considerable importance.

All of these troubles may be obviated if the bank be constructed well in the first instance. After a few waterings it solidifies, and there is little further danger. If the matter be not properly dealt with in the first instance, however, there is always more or less trouble.

Carrying Water Across Rises

Where ditches have to be cut through a rise, it is very necessary that the bottom of the ditch through the cut should be made the same width and the same depth below the surface of the water as other portions of the ditch. If the area of the waterway is reduced in any part of the ditch the carrying capacity of the ditch beyond that point is reduced to that of the smaller section. This is a point which is too often lost sight of by irrigators. It sometimes entails considerable work to dig out the large section of a cut necessary to carry the same amount of water as the ordinary part of the ditch so readily made with the delver. Unless the carrying capacity of the ditch through the cut be as great as that of the first portion, however, there is a lot of waste work in making the balance of the ditch to the proper size, as the water once retarded when coming through the cut will not flow at an increased rate when it again reaches the normal ditch, and the irrigation of the farm must necessarily be unsatisfactory, since the flow is less than is necessary. Very often settlers complain that their ditch is not doing satisfactory work—not carrying nearly as much water as it should—and on inspection it is found that the reason is the one stated above—namely, that the work of digging out the cut somewhere through a rise has been scamped.

Necessity for Keeping Ditches Clean

Too much stress cannot be laid upon the necessity for keeping head ditches well cleaned out. The job is very often a big one, but it is always worth while. The way in which the flow of water is lessened by weedy growths is remarkable. In many cases the ditches, which act satisfactorily while clean, fail to give anything like the requisite flow of water if weeds are allowed to choke them up.

Another argument in favor of cleaning out the ditches is found in the fact that if allowed to be overrun with weeds, the banks form a harborage for all kinds of pests. This fact has been foreseen by the authorities, and, under regulations in connection with the taking up of irrigation fams on the Murrumbidgee irrigation area, settlers are required to destroy noxious weeds. There are many weeds, however, which cannot be classed as "noxious" in the ordinary acceptation of the term. These perhaps do almost as much damage in the way above indicated as the better known and really noxious varieties.—Irrigation Record of N. S. W., Australia.

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Thursday, Dec. 31, 1914

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COTTON SEED POISONING

The North Carolina experiment station has been endeavoring to secure a remedy for poisoning of pigs which often occurs from feeding cottonseed meal. The station made one experiment with sulphate of iron, or the common copperas, taking two lots of pigs, six in each lot, feeding to each pig one-half pound of cottonseed meal and one and a half pounds of cornmeal daily, the ration being increased as the pigs grew. One lot was fed in addition a small quantity of copperas. The feeding was continued 13 weeks. Four of the six which were fed the cottonseed without the copperas died before the expiration of the 13 weeks, while the other two had a very unthrifty appearance and made an average gain of 35 pounds. The six which received the iron sulphate gained 55 pounds and all were in thrifty and apparently healthy condition.

The method of feeding the iron was to dissolve a pound of the copperas in 50 gallons of water, and a gallon of this solution was used in mixing each pound of the cottonseed meal. We believe this experiment has not been followed up sufficiently to justify general commendation of the process, but it is certainly worth some testing out on the part of California swine raisers.

FLOOD STUDIES

We have from Ford A. Carpenter, local forecaster for Los Angeles of the United States weather bureau, "Flood Studies at Los Angeles." This report has for its text: "The rainstorm of February 18-21, 1914, caused the most damaging but not the greatest flood in the history of Los Angeles. Railway and traffic were interrupted for a period exceeding 24 hours, bridges and roadbeds were destroyed, the harbor was silted, and some ranches and orchards swept bare. The property loss probably exceeded $3,000,000. This was offset many times over by the great amount of good this storm did in filling depleted mountain reservoirs, raising the level of the valley ground water, and amply soaking the hundreds of thousands of acres of agricultural land in the Los Angeles district."

The object of the publication is to give some of the contributing causes of this and similar floods. Dr. Carpenter goes into the meteorological causes of storms to a very limited extent and then touches upon monthly distribution of precipitation, relation between elevation and precipitation, distribution during a typical heavy flood, and then gives detailed history of the progress of the storm of last February. The paper is illustrated with several charts and one very beautiful half-tone of clouds due to cooling process of ascending air, with the Sierra Madre mountains in the background.

Dr. Carpenter is doing some remarkably effective work in the Los Angeles office, much of it being of a nature which is not down on his routine duties.

HAPPY NEW YEAR

Crop reports from California show last year's production of nearly all crops has been record breaking. Those crops which have not exceeded all preceding years have at least shown wonderful increase over averages. Rice and cotton have made the largest percentage of increase. Corn has likewise increased wonderfully; its increase over the preceding year was 300,000 bushels. Wheat increased 2,600,000, oats 1,100,000 and barley, our greatest field crop, increased over 11,000,000 bushels.

More satisfactory, perhaps, is to know what the total production is, so we give the following figures:

"The 1914 production of the different crops: Corn 2,160,000 bushels, wheat 6,800,000 bushels, oats 7,700,000 bushels, barley 42,060,000 bushels, rye 136,000 bushels, rice 800,000 bushels, potatoes 10,350,000 bushels, sweet potatoes 966,000 bushels, hay 5,265,000 tons, cotton 37,000 bales, sugar beets 996,000 tons.

"Wheat sown in California this fall totaled 463,000 acres as compared with 421,000 acres last year. The condition is 98 per cent of normal, compared with a 10-year average of 91."

From the last sentence it appears that California is making some preparation to join the rest of the United States in feeding Europe during the next year. On the whole, California should have a most successful year, and we wish for every reader of the Cultivator not only a happy first day of the year, but a happy every day, and trust all will join in helping to make this the greatest year California has ever had.

DAIRYING IN CALIFORNIA

We have been given a look at the tenth biennial report of the state dairy bureau which is now in the hands of the state printer. It covers the two years preceding November 30, 1914, and gives cause for gratification by showing that dairying in California is increasing. For the year 1913 our total production of butter was 55,542,709 pounds. The figures show the next year's output to have increased to 59,286,460 pounds. Imperial County shows the most marked advance, rising to second place in the dairying counties of the state. Stanislaus not only holds her lead, but increases it, showing during the year 1913 a production of 7,541,900 pounds, and for the year just ended, 8,184,390. Humboldt County, formerly first in dairying in this state, has dropped to third place, producing last year 5,251,887 pounds.

In cheese production Santa Clara County takes the lead, with 768,100 pounds, Monterey crowding close with 728,111. Monterey County, however, showed a material decrease during 1914 over her production of 1913, while Santa Clara more than doubled its production over the preceding year. The cheese production of the state has decreased since 1903. In that year it produced over 7,000,000 pounds, while in 1914 the production was slightly over 6,000,000, though 1910, 1911 and 1912 showed a production down to about 4,500,000. Butter on the contrary has nearly doubled in production in the same period.

The report will contain addresses of all cheese factories and creameries and much other valuable information for every dairyman in the state. We doubt not it will be mailed to all dairymen requesting it of the secretary, F W. Andreasen, Berkeley.

PROFIT AND LOSS

Superintendent of Advanced Registry, M. H. Gardner, of the American Holstein-Friesian Cattle Club, is sending to the world information as to record secured by Tilly Alcartra, of whom Yolo County, California and in fact all the United States is proud. Her record has been given very completely in a former Cultivator but we wish to take one fact from Superintendent Gardner's report for the sake of preaching a two or three sentence sermon. Lest one fact be overlooked in the more extended report which appeared, let us mention that during no month of the entire year did this cow produce less than a ton of milk, and the twelve months' performance totaled almost 15¼ tons. To produce this world-breaking output she was fed during the year at a cost of $150, more than many cows and their entire year's feed, all told, are worth.

Another fact from Secretary Andreasen's report for the past two years under "Cost of Keeping Cows." —The cost of keeping a cow which yields 150 pounds of butterfat during the year is about as follows: Feeding, $30; milking and care, $24; interest on cost of cow, $3.50; depreciation, $5.00; interest on equipment, $3.00, or a total of $65.50. The income from her butterfat is $45; skim milk, $8.00; one calf, $2.00, or a total of $55. This leaves a net loss to the dairyman of $10.50. The other cow whose year's feed cost $150 was capable of turning that feed into profit to her owner, purely from a butterfat standpoint, of over $250.

All the dairy cows of this state cannot be Tilly Alcartras, but they certainly may be better than the average 150-pound cow, and the dairyman who is carelessly proceeding with untested cows is one groping in the dark and sure to be carrying some in his herd which, like the 150-pound cow referred to, are bringing a net loss every year. Milking is not an agreeable enough occupation to justify any farmer in paying so high a price for such diversion.

The Russian government has placed an embargo on all kinds of lumber, to prevent its exportation; walnut lumber, including Circassian walnut, much prized by American furniture makers, is specifically mentioned.

Agricultural Notes

President Menocal of Cuba on December 4 signed a decree prohibiting importation of citrus trees from any country, including Mexico. This is to prevent introduction of citrus canker.

The coming wheat harvest of Australia, on account of excessive drouth, is expected to be very small, being estimated at from 5,500,000 to 8,000,000 quintals as against 28,270,000 quintals in 1913-14.

Washington's first shipment of apples through the canal to New York was a 20-carload lot which was sent out the middle of the month. The water rate will be about half the former rail charge.

The Swiss farmers have long been complaining of the dearth of farm laborers. As a result of state investigations it has been determined that there is a dearth of day laborers in 74 per cent of the communes.

Fifteen butter and egg firms in New York City virtually control the prices of the two commodities throughout the United States, according to information made public by the state attorney-general's office, which is investigating the sale of butter and eggs in that city.

The census bureau has just completed a report dealing with the American negro and showing the part he plays in the agricultural industry of this nation. Three-fourths of all the negroes in the United States live on farms. There are 893,000 negro farmers in the United States and 673,000 of them are tenants.

Experiences with forest fires on the national forests this year show that automobiles, where they can be used, furnish the quickest and cheapest transportation for crews of fire fighters. Motor rates are higher than those for teams for the actual time employed, but the total cost per distance traveled and in wages paid to men in getting to fires is much less. The time-saving is self-evident; trips which ordinarily require two days time by team have been made by automobile in a few hours.

According to report of the International Institute of Agriculture the production of wheat in 1914 in the group of counties representing about 80 per cent of the total production of the northern hemisphere amounts in round numbers to 792 million quintals, against 872 million quintals in 1913. The 1913 production was, however, exceptionally large, so that compared with the average production for the ten years, 1903-12 (686 million quintals), this year's production is 106 million quintals, or 15.5 per cent above the average.

There is considerable discussion among the citrus fruit growers and shippers of Florida as to the advisability of using the bushel basket and half bushel basket, with wood cover and center support for the shipment of citrus fruit. There is no doubt that the bushel basket is growing in favor with the trade for the shipment of peaches and other fruits, and many Florida growers and shippers of oranges are willing to give it a fair trial. Many of the growers believe that the basket, particularly the half bushel basket, will materially help to increase the demand for citrus fruits as they argue that the consumer will buy a half bushel basket and carry it home when he cannot afford to buy a box.

Agricultural News Notes of the Pacific Coast

Northern California

Contra Costa County has shipped 500 cars of celery.

The Napa County farm bureau has a membership of 500.

Alturas, Modoc County, has subscribed stock for a cooperative creamery.

A large acreage of walnuts has been planted in Shasta County this season.

Several hundred acres will be planted to olives near Marysville, Yuba County.

The output of beans from Stockton is said to be in excess of 440,000 bags, valued at $1,320,000.

The Anderson-Cottonwood Irrigation System in Shasta County has been installed at a cost of $10.94 per acre.

The Durst Brothers have disposed of a large acreage of hop lands near Wheatland valued at approximately $1,000,000.

Members of the farm bureau, at Little Lake, near Willits, recently met and discussed the matter of a farm bureau adviser.

Yuba City, Sutter County, is testing an alkali-resistant peach root in very strong alkali land and finds it is succeeding admirably.

Sacramento reports that grapes marketed in kiln-dried redwood sawdust will bring to the growers of this state in excess of $400,000.

Incorporation papers have been prepared for the organization of the Sonoma County Hop Growers' Association with a capital of $500,000.

The California viticultural commission is experimenting in the preservation of grapes, one experiment consisting in keeping fruit in air-tight rooms filled with fumes of alcohol.

The Dairyville Dairy Association, of Los Molinos, Tehama County, has decided to continue operating its cheese factory instead of selling it, as recommended by some of the members.

Dairymen of Humboldt County are organizing a cooperative association. They propose to incorporate and secure a trade mark which shall be used only on best grade of butter. The idea is to build up a name for Humboldt butter which shall be the equal of any in the country.

A huge irrigation scheme has been suggested, which shall empound great quantities of water on the Sacramento above Red Bluff and reserve water sufficient for nearly 90,000 acres. The cost, if the scheme should be carried out, will be in the neighborhood of $23,000,000. Engineers have declared it to be entirely feasible.

The grange at Rutherford, Napa County, has elected the following officers: Master, H. Lutley; overseer, W. H. Bradley; lecturer, W. E. Cole; steward, C. Davis; assistant steward, J. Edington; chaplain, Mrs. C. Gardiner; treasurer, Edgar Dunlap; secretary, Miss Rachel Yates; Ceres, Mrs. C. Sanborn; Pomona, Mrs. W. H. Harris; Flora, Miss A. Davis; lady assistant steward, Miss L. Buttimer.

Central California

Kerman, Fresno County, will plant 100 acres of rice.

Porterville poultrymen held their annual show last week.

Hog cholera has appeared in Kerman, Fresno County.

Visalia shipped its last car of grapes and other fresh fruit last week.

Rabies has been reported among the dogs of Hanford, Kings County.

The navel orange shipping season of Tulare Country is practically ended.

A farmers' union has been organized at Riverbank, Stanislaus County.

Western Fresno County finds its dairy industry increasing very rapidly.

The free public market opened in Watsonville most successfully last week.

Salida, Stanislaus County, is the latest with a center of the farm bureau.

The Irrigation District Association of California convened recently in Turlock.

Stanislaus maintains its position as the great butter producing county of the state.

Australian horticulturists are investigating citrus culture conditions in Tulare County.

Many fig trees of the Fresno section are affected with some trouble said to be fig blight.

A carload of horses was shipped to European battle fields from Hanford, Kings County, last week.

The Water Users' Association of the Modesto irrigation district will meet on January 7 in annual session.

The apple crop of the foothills of Tulare County is reported as exceptionally short but of high quality.

Creameries near Hanford have paid to patrons for the first half of December from 35 to 39 cents for butter fat.

The Wood Colony near Modesto, Stanislaus County, has recently organized a branch of the farm bureau.

Watsonville, Santa Cruz County, has shipped 3,200 cars of apples. There yet remains slightly over 200 cars to go.

Visalia is endeavoring to secure a one-day session of the National Irrigation Congress which meets in California in 1915.

A proposition is under way to organize lands at Lindsay, Tulare County, under the Wright irrigation law and secure a gravity water system.

The state attorney-general has commenced action to quiet title to large tracts of land lying in what was formerly the bed of Tulare Lake.

Railroad people are putting up a claim for increase in minimum carloading requirements for oranges and wish to raise from 400, which now prevails, to 460 boxes per car.

The California Grape Protective Association recently met in San Francisco and discussed the effect of temperance legislation on the industry, and decided emphatically to divorce itself from any connection with saloon interests.

Southern California

Anaheim expects to ship some 600 carloads of oranges this season.

There is now much talk of an annual fair for San Gabriel Valley.

Many cantaloupes have already been planted in the Brawley district.

The Riverside Driving Club has been reorganized. M. I. Wheeler is president.

There is talk of another government investigation of the Lima Bean Growers' Association.

Irrigation was the principal topic of discussion at the recent meeting of the Oxnard farm bureau center.

The Elsinore Cured Fruit Association has just sold to New York brokers two carloads of dried fruit.

The Oxnard Courier says that over 100 acres of walnut trees in the section about Oxnard are being grubbed out to make room for lemon groves.

The Ventura County Bee Men's Association has requested county supervisors to reappoint W. H. Allen of Santa Paula as county bee inspector.

The Anaheim Sugar Company has received notice of the arrival of two shipments of beet sugar at New York, which went by way of the Panama Canal.

Investigation is being made as to possibility of making paper from bean straw. It is thought the straw will also make a fiber valuable for use as excelsior.

Hemet, Riverside County, shipped its first car of oranges November 19, the fruit at that date showing sugar test well above the standard required by the government.

The Piru Citrus Association has been organized with David Felsenthal, president; C. S. Johnson, secretary and manager; F. C. Chapman, U. F. Del Valle, A. N. Davidson and John Alcock, directors.

Practically all of the apple crop of the Oakglen district, San Bernardino County, is now in storage. Store houses have been built in the mountains where the natural cold will keep the fruit in best condition.

For the purpose of checking the spread of date scale a number of interested date growers of Imperial and Coachella Valleys are endeavoring to secure a state quarantine regulation of importations of date offshoots.

United States Horticultural Inspector Beers, who is inspector of Santa Barbara County as well, has been assigned an office in the new federal building at Santa Barbara where he will examine all shipments of trees, shrubs and other plant life on which inspection is compulsory, presented for mailing at the postoffice.

The greatest collection of citrus trees in the world is being brought together by the University of California at its citrus experiment station in Riverside. These will be experimented with to find and develop better varieties for California to raise commercially. This year 64 standard named varieties and 76 different minor varieties have been budded.

The Coast

Arizona is taking up the matter of farm advisers.

Onions are selling at Portland at $1.25 per hundred pounds.

Farmers of Rupert, Idaho, are experimenting with sugar beets.

Colorado sugar beet growers are demanding an increase in price.

The cotton gin at Yuma, Arizona, is operating to its fullest capacity.

Arizona quarantines against cattle from all sections excepting California.

Lewiston, Idaho, reports its last livestock exhibit as the finest ever.

Chandler, Arizona, is elated over its winnings at the recent Arizona poultry show.

New Mexico is quarantined against cattle importations from any source outside the state.

Yakima apples shipped through the Panama Canal reached New York in excellent condition.

The farmers' short course at the University of Arizona, Tucson, is to be held from January 3-16.

Oranges from the Yuma Heights section of Arizona have sold this year as high as four dollars per box.

Oregon reports the hop market advancing, the 12-cent price having already been reached at Portland.

Because of free wool and other discouraging features the Oregon Wool Growers' Association is discussing disorganization.

Students from the University of Idaho captured three first prizes at the recent Pullman hog show in the judging contests.

A church at Phoenix, Arizona, is to give a dinner of roast ostrich and a prize of an ostrich feather is to be given to each one who partakes.

Wheat growers of eastern Washington are complaining because of lack of snow and the subjecting of wheat crops to too much freezing and thawing.

The movement toward using school houses for social centers is being encouraged throughout the northwest, the grange especially using them for meeting places.

The newly elected officers of the Arizona State Poultry Association are, president, Ernest Hall; vice-president, J. F. Warner; secretary, H. G. Powers, Phoenix.

The agricultural experiment station of Arizona is being encouraged by farmers who are raising sufficient money to secure a farm adviser for at least two counties of the state.

A log raft containing 1,000,000 feet of cedar, said to be the largest ever floated on the Pacific, recently made the trip from British Columbia to Puget Sound. It was 100 feet long and 70 feet wide; it stood 15 feet out of the water and 20 feet under.

At the poultry show held at Spokane last week a special feature was made of an exhibit of capons, showing methods of dressing and preparing for the table. The idea was to make it an advertising feature to increase the demand for that excellent meat.

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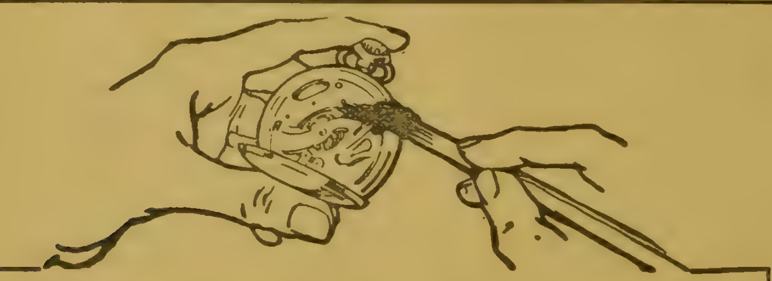

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Live Stock and Dairy

LOOK OUT FOR THE YOUNG PIGS IN RAINY WEATHER

Written for California Cultivator
By Sacramento Valley Contributor

WE are all willing to admit that we have a much more mill winter season in California than in the middle west and that it is perfectly possible and feasible to have colts or calves or pigs or lambs dropped any day in the year with the assurance that with any reasonable care and attention they can be forced right along from birth to maturity without the serious setback that might occur in the east because of a spell of terribly cold, stormy weather at the time of or following birth.

But because of our favorable conditions and the fact that over a large part of the state we have little freezing weather and no extreme cold, as far as themometer readings go, we must not forget that a day of windy chilly rain may thoroughly chill a young pig and check growth to such an extent that a couple of weeks will be required to bring it back to its condition before the exposure.

In the Sacramento Valley we have had a long, dry fall and stock has needed little if any shelter so that this first rain caught some farmers somewhat unprepared to shelter all of their stock—as it always does. On a busy farm there are always just one or two more jobs to be done befor winter quarters are fixed up.

And when a farmer does find himself with a lot of young pigs that are forced out into the storm he should make a quick shift somewhere and get them in out of the weather. Older hogs do not mind storms like these first early rains; they have fat and bodily heat in reserve in sufficient quantity so that the rain does not chill them much, but it "shivers" little pigs right into the "marrow of their bones," it makes them "hump" their backs, their hair stands on end and they are just as unhappy and miserable as a little child with insufficient clothing. For hogs and human beings are very much alike in many ways. They have alimentary canals that are quite similar and their skins protect them from the elements in a less degree than the outer coverings of other animals. The fleece of a sheep, hide and hair of a cow or even a horse, offer a much more substantial "buffer" between the air and the sensitive inner tissues of the body than does the hide of a hog with its comparatively thin covering of bristles, and man has even less protection. The hair, fur or fleece of other animals is warm not only because of the thick coat, but because there is contained within the fibers of it a large amount of air which is a non-conductor of heat or cold and makes an added protection. The heat of summer and the cold of winter alike are transmitted readily through the hog's hair and hide to the tender parts of the body. This is why hogs require a "wallow" of some sort in summer so that they may cool off by the evaporation of moisture from the surface of their bodies, and the reason why they must be kept dry in winter—so that there may be no evaporation and cooling off.

As the weather gets cool in the fall the "wallows" that were the favorite haunts of hogs during the middle of the day, during July and August are deserted and they are found taking their after-dinner nap in some high, dry place.

In this country, however, and particularly in the interior valleys, all that hogs require during rainy weather is a dry bed to sleep in. The temperature does not fall low enough to require buildings constructed so as to keep out the cold.

HOW TO MILK

Which is the best method of milking, wet or dry hand, and why?

In comparing different methods of milking there are three things, I believe, which ought to be considered as being of the greatest importance, namely: cleanliness, its effect upon the cow, and rapidity.

The first named is the one which we need to consider the most, as it directly affects the quality of all dairy products for, without clean, wholesome milk, it is an absolute impossibility to bring out a good dairy product no matter what is done to it.

After milk has once become dirty it may be strained ever so much and the essence of the dirt will still remain in the mlk.

For this reason, dry-hand is better than wet-hand milking, because if all external dirt and dust is removed from the udder and teats there still remain some dirt in the pores which in wet-hand milking are washed and worked out, as it were, and is constantly being drawn down towards the end of the teats, where it will eventually join the milk.

The same holds true as regards the hands of the milker, for no matter how clean you may wash your hands, there always remains some dirt in the pores which will be worked out by wet-hand milking.

Also, in warm weather the hands will perspire more or less, and this perspiration will also join the milk in the manner described above.

Now, as to the effect on the cow of dry and wet-hand milking. To obtain the best results, the time of milking must be as pleasant to the cow as any other.

For this reason, too, I believe, dry-hand milking should be preferred, as it will irritate less the delicate tissues of the udder and teats. Also in cold weather the teats are not as liable to become chapped and cracked and consequently sore when dry-hand instead of wet-hand milking is used.

Then it is possible to milk a good deal more rapidly with dry hands than with wet. This may seem a mere trifle at first glance, but still if you only gained a minute's time per cow at each milking on a herd of fifteen cows, you would be one-half hour ahead each day, which, if summed up for the month and the year, would mean a considerable saving of time.—The North Western Agriculturist.

SALE OF DRAFT HORSES

At a meeting of the board of directors of the California Draft Horse Breeders' Association, held on Tuesday, at the Stewart Hotel, in San Francisco, it was decided to hold a sale of pure-bred draft horses at the university farm, Davis, on the 24th day of February, 1915. The horses consigned to this sale must conform to the rules and regulations of the state stallion registration laws as to soundness. For stallions 3 years old or over, evidence must be furnished that the horse is a breeder.

The object of this sale is to create if possible a permanent market for pure-bred horses. It is planned to make this an annual event, so that breeders will look forward to this affair as the best time to dispose of their surplus animals and that intending purchasers can avail themselves of this excellent opportunity to secure what they want. There is also need for some system of exchanging stallions between different companies from different localities. There are many small towns where a good horse is no longer especially useful because a great number of his progeny are located in the surrounding region. This sale offers a very great opportunity to sell such a hose and buy one which has proved himself a good breeder.

Entries for this sale will close January 15, and the names and pedigrees of horses to be sold must be in the hands of the secretary on that date. This is made necessary in order to give sufficient time to compile and print a catalogue.

The auctioneer's fees and advertising will be charged to the consignors at the actual cost so that no profits will accrue to the association on this sale. Any one in the state may submit horses whether they are members of the association or not. The terms of the sale will be cash. Everyone who is interested should send in his entries at once or should write to the secretary, J. I. Thompson, Davis, California, for the complete list of terms of sale.

PROFIT OF THE BUTTERFAT COW IN SKIM MILK PRODUCTION

An inquirer recently asked of one of the prominent papers what breed of dairy cattle he should choose for his dairy farm where the product from the cows was to be marketed as cream and the skim milk would be fed to the hogs. There followed this inquiry a statement of the claims of leading breeders for the breed they favored, and many of these claims were based on the economy of producing milk.

The following is a statement sent out by the American Guernsey Cattle Club:

As we understand the question of the economy of milk production the situation on the inquirer's farm would be something like this: The inquirer has each year as the product from his soil a certain amount of feed which he wishes to place upon the market at a price which will return to him the greatest net profit for the year and still keep his farm in a good state of fertility.

In the above instance the inquirer has chosen dairy cows and hogs for this purpose, generally accepted as a good combination, and wants to know which breed of dairy cows he should market his feed through in order to give the greatest return from his feed. Instead of comparing breeds in this matter the composition of Guernsey milk as compared with the composition of average milk will be used as a basis of determination.

Therefore, on the income side, if the inquirer is paid for his cream on a butterfat basis, he will get no more per pound than if he used average cows, but on the other hand, if he is so situated that his Guernsey cream gets its just dues he will get a premium price for this portion of his product. As to the skim milk, by feeding it to hogs he will get the same price per 100 or per pound as he would get for skim milk from average cows. Assuming that butterfat is the basis on which he is paid for his cream, it then becomes a question of the cost of production of butterfat and skim milk of the Guernsey cow over the cost of the same for the average cows.

Data from a large number of sources places the average cost of producing milk at $1 per 100 pounds. Milk is made up of several food elements, against which the $1 per 100 ought to be charged, namely—fat, sugar, casein, albumen and ash. Average milk will analyze about as follows: Fat, 5.5 per cent; sugar, casein, albumen, ash, 8.5 per cent, or a total of 12 pounds out of each 100 pounds of milk is solids. Then it costs, one might say, $1 to produce 12 pounds of solids, 3½ pounds of which is found in the fat and 8½ pounds in the skim milk, therefore, 3½ 1-12ths of $1, or practically 30 cents, will be the cost of 3½ pounds of fat, or approximately, one pound will cost 9 cents. The skim milk will then cost 8½ 1-12ths of $1, or in the neighborhood of 71 cents per 100 pounds. Think of it! Nine cents to produce a pound of fat with average cows for which he is going to receive anywhere from 30 to 40 cents, and 71 cents to produce 100 pounds of skim milk for which, if fed to hogs, he will receive at the most, figuring either on a corn or nutrient basis, 32 cents. Which would the inquirer rather have, the fat or the skim milk? Of course he must have them both together, as it is impossible to get the cheaply produced fat without getting with it a certain amount of the costly or money losing skim milk. It then becomes a question of what proportion of fat to skim milk will make the most profitable product to market, and Guernsey milk will now be considered as a comparison with average milk.

Wing tells us the average analysis of Guernsey milk is: Fat, 5 per cent; sugar, casein, albumen, ash, 10 per cent, or a total of 15 pounds out of every 100 pounds of milk is solids. Figuring the same as we did for the average milk, we find that Guernsey fat is produced at 7 cents per pound and skim milk at 66 cents per 100, or 2 cents less per pound for fat and 5 cents less per 100 for skim milk. In other words, the inquirer can produce a pound of fat from average cows at 9 cents and receive about 33 cents for it, while from Guernsey cows he can do the same and get from 33 to 50 cents per pound for it. He can produce skim milk from average cows at 71 cents per 100 and get 32 cents for it, or from Guernseys at 66 cents and get 32 cents for it.

We thus see that a large part of the cost of producing milk is due to the great cost of producing the skim milk, and since we cannot increase the cheaply produced fat in any cow's milk without a corresponding increase in the expensively produced skim milk, we must start with a cow that has a large proportion of fat to skim milk in order to get the most economical production when the marketing of cream and feeding of hogs is under consideration. — American Guernsey Cattle Club.

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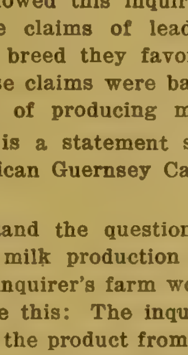
Everything for the Dairy.
San Francisco. Seattle.



LARROWE'S DRIED BEET PULP
is becoming a standard portion of every ration in a rapidly increasing number of dairy herds. Its worth as a succulent, milk-producing, vegetable feed has been fully proven by large and small feeders.

The New World's Champion Cow—
Tilly Alcartra
—whose milk record for the past year was over 30,000 lbs. —ate Larrowe's Dried Beet Pulp daily, and to this is attributed a large part of her splendid record.

YOU can increase the supply of milk from your cows at least 1 to 5 lbs. per cow a day by feeding Larrowe's Dried Beet Pulp. It is put up in 100-lb. sacks and can be had either plain or with molasses. Order from your dealer NOW.

FREE BOOKLET—
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giving valuable information and feeding instructions will be sent to any address on request.

THE LARROWE MILLING CO.
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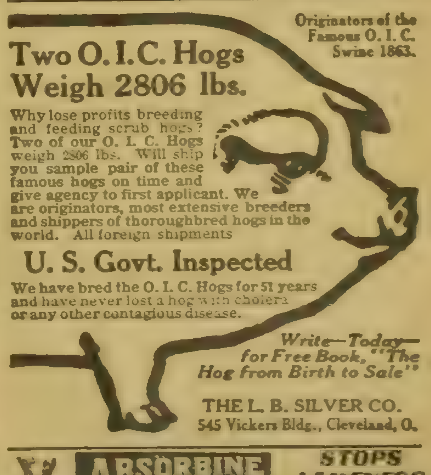
Economy Calves
You can now feed a calf for the first five months of his life for less than half the cost of the milk he would consume in the old way. Do this with
Blatchford's Calf Meal
This meal has been known as the complete milk substitute since the year 1800. Very easily prepared. It prevents scouring promotes a strong rapid growth and makes a better cow.
Write for Actual Figures based on results, that show you how to increase your calf profits. The new data will be sent for the asking. Write today.
Blatchford Calf Meal Factory, Dept.4269, Waukegan, Ill.



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Two O.I.C. Hogs Weigh 2806 lbs.
Why lose profits breeding and feeding scrub hogs? Two of our O. I. C. Hogs weigh 2806 lbs. Will ship you sample pair of these famous hogs on time and give agency to first applicant. We are originators, most extensive breeders and shippers of thoroughbred hogs in the world. All foreign shipments
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We have bred the O. I. C. Hogs for 51 years and have never lost a hog with cholera or any other contagious disease.
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from a Bone Spavin, Ring Bone, Splint, Curb, Side Bone, or similar trouble and gets horse going sound. Does not blister or remove the hair and horse can be worked. Page 17 in pamphlet with each bottle tells how. $2.00 a bottle delivered.
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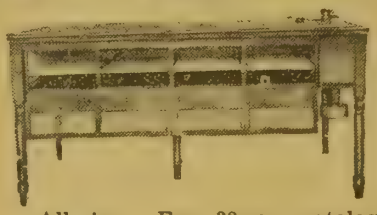
"PIONEER" Patented Incubator $15
540 Egg Size



down and balance payable monthly. We pay the freight and ship for your approval before you pay ONE CENT. Our prices are much lower than other factories. We claim and guarantee the Pioneer to be the highest class hot water Incubator on the American market.

All sizes. Free 32-page catalog. Send today.

THE PIONEER HATCHERY CO. 112 East 8th St., Los Angeles, Cal.

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There are definite ends you wish to accomplish. Your ambition has a goal. Are your forces organized for achievement, or are you zig-zagging with events?

Mark a straight line to your goal. Your plan calls for money. Get it the surest way—**a savings account at the Security and a resolve to keep it growing.** Make no truce with trifling inclinations. The mastery of your small coin gives you command of large possibilities.

Organize your living and your spending. Make that account of yours at the Security the object of your constant consideration. Then you will be, of a certainty, traveling successward.

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Oldest and Largest Savings Bank in the Southwest.

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Fifth and Spring
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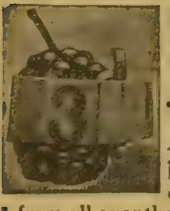
Walnut Trees

Franquette and Mayette grafted on Cal. Blk. 6 to 8 ft., $75 per 100, $1 each
4 to 6 ft., $60 per 100, 75 cents each
3 to 4 ft., $50 per 100, 65 cents each
2 to 3 ft., $25 per 100, 35 cents each
California Black Walnuts, $8 per 100
Blenheim Apricots, French Prunes.

FRANK GRECO,
423 Josefa St., San Jose, Cal.



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Alfred Mitting has had 47 years experience with berries from all over the world. His new berry, Macatawa, is the wonder, to all that see it in fruit. It is 3½ inches one way by 3¾ inches the other way. Send a postal card today for his 1915 catalogue with colored plate, including the cream of all berries from a commercial standpoint or for home requirements.

ALFRED MITTING
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Cherries are the first, the most attractive and the best fruit of the summer season. This, together with the fact that they are very profitable, yielding from $400 to $600 an acre, makes them a good "buy" for any fruit grower in position to raise them.

Our block includes Bing, Black Oregon, Black Tartarian, Burbank, Royal Ann, and other good varieties on Mahaleb and Mazzard Root. Write Us First.

THE SILVA-BERGTHOLDT CO.
"Fruit Tree Specialists"
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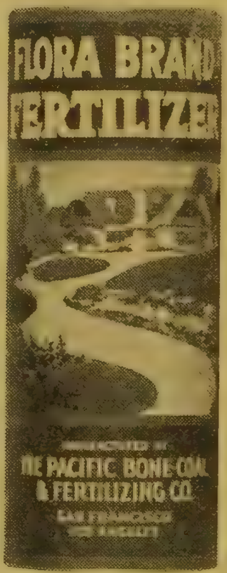

Beautify Your Home

With the aid of FLORA FERTILIZER spread on the lawn and around the flowers. For your spring planting of berries and vegetables — just the thing.

A 5-lb. Can, enough to cover a lawn of 200 square feet, at your seed store or florist—50c., or sent direct by parcel post to any address in California — 60c. Send money order, check or coin.

Pacific Bone Coal & Fertilizing Co.
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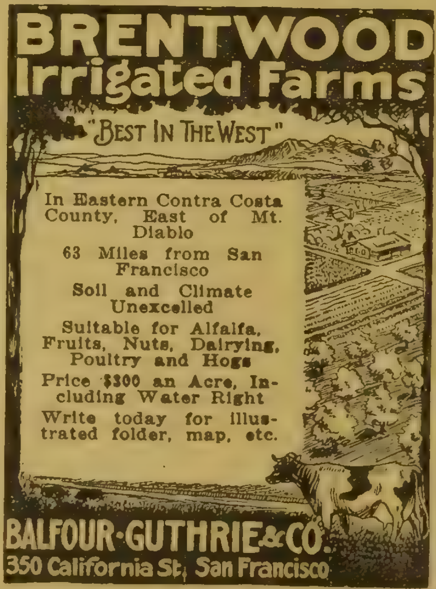

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"BEST IN THE WEST"

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63 Miles from San Francisco

Soil and Climate Unexcelled

Suitable for Alfalfa, Fruits, Nuts, Dairying, Poultry and Hogs

Price $300 an Acre, Including Water Right

Write today for illustrated folder, map, etc.

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350 California St., San Francisco

DIVIDEND NOTICE

The German Savings and Loan Society
526 California Street, San Francisco

For the half year ending December 31, 1914, a dividend has been declared at the rate of four (4) per cent per annum on all deposits, payable on and after Saturday, January 2, 1915. Dividends not called for are added to the deposit account and earn dividends from January 1, 1915.

GEORGE TOURNY, Manager.

Questions and Answers

THE EDITOR AND STAFF

Questions to be answered in this department should be received at this office one week before reply is expected. Write plainly on one side of the paper and sign full name and address. Unsigned communications receive no attention.

Dip for Potatoes

Please furnish formula for preventing scab on potatoes, also smut in grain.—Subscriber, Anaheim.

In the September 11 (1913), issue of the Cultivator are given formulas for the preparation of corrosive sublimate and formalin solutions for dipping seed potatoes to prevent scab. Of the corrosive sublimate (bichloride of mercury) use two ounces to 15 gallons of water. If it is desired to use the formaldehyde solution use formalin one ounce to two gallons of water. Formerly bichloride of mercury was the principal agent in preventing this scab. The seed was dipped for an hour to an hour and a half in a solution of the strength given above. More recently practically as good results have been secured by the use of formaldehyde and it is cheaper and much simpler to handle. Seed grain should be dipped longer than the potatoes.

Canker

Chickens have thick yellow substance that gathers on tongue and all over mouth. Their eyes swell. Tried to cure with coal oil. Am killing and burying all I find with these symptoms.

This is canker. You can probably cure it by swabbing out the mouth with pure hydrogen peroxide and then soaking with camphorated oil. Repeat in three days. If it returns after this treatment try swabbing with undiluted creolin which is a very powerful disinfectant. Whatever you do look for the cause of the trouble which may be mould germs in the scratching litter or feed or close air in the roosting house. Male birds that fight a good deal are more liable to canker than other birds because wounds where they have been pecked are easily infected, but there will be no canker, even in open wounds, unless there are germs somewhere to infect them. Clean up thoroughly and see that the birds are not overcrowded at night nor deprived of the pure air which they need even more than the rest of us.—J. A. K.

Stretching Wire Fence

In stretching woven wire fence if corner post is plumb and wire fastened properly does it make any difference in attaching the stretcher that the clamp which is bolted securely across the full width be two or more inches off of the square or right angle with the line of the wire? That is, where a single chain stretcher is fastened to the center of the clamp will either the top or bottom wire be tighter or looser because of this variation in the angle?—Subscriber Bishop.

There will be no difference in the tension of the top and bottom wires under the conditions named. It is presumed from your question that regular wire fencing is to be used having all the lengthwise wires running full length of the piece of fencing and straight. With chicken netting having only top and bottom wires full length and the other wires forming a diagonal, or diamond mesh, there is likely to be some trouble with sags in the netting which have to be taken out after the top and bottom wires are placed at the ends. This can be done by spreading the wires farther apart on the posts. Chicken netting made after the style of regular wire fencing is much the easiest to put in place and will hold its position better. —J. B. N.

Correcting Alkaline Spot

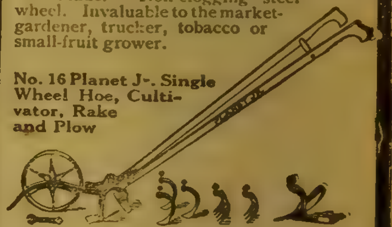
We recently had inquiry as to draining a small spot of alkali in the center of valuable property, where it would not be possible to drain into an open ditch. We suggested digging a shaft 12 or 14 feet to a gravel stratum underlying the land, and running tile into this. We asked Mr. J. B. Neff for further information and he suggests the use of a lberal amount of high-grade gypsum, say at the rate of even 10 or 1[illegible] tons per acre. Mr. Neff states that this with drainage will soon correct the worst alkali. He adds: "Of course, sufficient water must be applied on the surface to leach out all alkali."

Planet Jr.
Harrow: Wheel Hoe

Planet Jr. tools save time, lighten labor, and get bigger, better crops at less cost. Designed by a practical farmer and manufacturer with over 40 years' experience. Last a lifetime. Fully guaranteed.

Planet Jr. 12-Tooth Harrow

Stronger, steadier in action, and cultivates more thoroughly than any other harrow made. Non-clogging steel wheel. Invaluable to the market-gardener, trucker, tobacco or small-fruit grower.



No. 16 Planet Jr. Single Wheel Hoe, Cultivator, Rake and Plow

The highest type of Single Wheel Hoe made. Light but strong, and can be used by man, woman, or boy. Will do all the cultivation in your garden in the easiest, quickest and best way. Indestructible steel frame.

72-page Catalog (168 illustrations) free
Describes 55 tools including Seeders, Wheel Hoes, Horse Hoes, Harrows, Orchard-and Beet-Cultivators.
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We carry stock in San Francisco and Los Angeles
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40 Acre Equipped Farms

On every 40 acres we install a pumping plant, provide trees and seed adapted to the soil, and necessary farm implements to begin your work.

This establishes you at once on good land in the early fruit district of the upper Sacramento Valley, and assures crop returns the first year. Every one who wants a farm should investigate this offer. Write to.

DUDLEY MOULTON
12th Floor 1st Nat'l Bank Bldg., San Francisco

Poultry for Profit

A WOMAN'S POULTRY PLANT

Written for California Cultivator

By Jean A. Koethen

POULTRY culture as a field for women long ago passed its experimental stage. Perhaps it would be nearer the truth to say it never had an experimental stage, for women take to the care of chickens as naturally as to the care of children. Women were the first poultry keepers. If they have not enough creative power to invent incubators or sufficient patience to work out the principles of mating and breeding, they have the housekeepers' instinct for cleanliness and the gift for mothering which is the first essential in the production of fine, healthy stock.

Half an hour's ride from Los Angeles I found the other day a woman's poultry plant so perfect in its arrangement, so spick and span in its immaculate cleanliness that I want to tell the readers of the Cultivator about it.

Three years ago the proprietor, Mrs. E. B. Martin, came with her husband to this 50-acre ranch, which was then bare land. Forty-five acres was devoted to house and grounds and orchard and garden, and the remaining five acres set aside for Mrs. Martin's poultry operations. How much experience she had had before this I do not know, but she must have understood the principles of poultry culture and the care of fine stock or she could not have built up the plant she has built up in three years.

A start was made with two choice pens of S. C. White Leghorns, and from this modest beginning has grown a flock of nearly 1,000 standard-bred birds. Mrs. Martin's aim from the first was to breed show and breeding stock, so she did not make the mistake of crowding her birds. Plenty of room and green range are the first requisites for symmetrical and vigorous growth, and the plant was planned to meet these essential requirements.

This plant is "different" in three ways:

1. The growing stock are kept from weaning time till maturity on alfalfa range.
2. All hatching is done by hens.
3. Houses are arranged with a view to the easiest possible cleaning and the greatest possible comfort for the birds.

The buildings and runs are arranged in five sections, exclusive of the quarters for mothers and baby chicks: The cockerel runs, which occupy the place of honor at the east side of the five acres; houses and yards for breeders; a large yard containing individual coops with covered runs for cock birds; laying houses; the pullet yard.

Believing as she does that the male bird is at least half the pen, Mrs. Martin gives more room to her young cockerels than to any other stock. When the young birds are taken from their mothers at the age of six weeks or thereabouts they are placed in small coops, 20 to a coop. These coops are built of shakes, with open fronts, but the front of each is protected from rain and sun by a canvas awning three or four feet long which is tacked to the house at one end and to a couple of stakes at the other. Under this are the water fountains and mash troughs. I was there the day after a heavy, driving rain, and the ground under these canvas awnings was as dry as if there had been no rain. This arrangement gives the birds an abundant supply of fresh air without drafts or dampness. A hover is placed in each coop at first so that the chicks need not roost unless they wish, but they soon find their places on the roosts, and the hover is then removed. From this time on the floor of the coop is kept covered with litter so that tht birds may scratch or cuddle as they please.

But the characteristic thing about these cockerel quarters is the large alfalfa run in which each coop is placed. Each flock of 20 has a run as large as an ordinary building lot, perhaps larger, set out to fruit trees with alfalfa between, and provision is made for irrigating the alfalfa, so that there is always new growth. Here the cockerels live literally "in clover," with unlimited range, and it is no wonder they grow up husky and vigorous. From time to time the birds which do not come up to standard are culled out for the table, while those of unusual merit are taken out to be shown or sold as breeders, so there may be only half a dozen in a run by the time they are full grown.

The yards allotted to the breeding pens, of which there are 12 or 14, are arranged in two tiers, one back of the other, and all fronting on a good-sized alfalfa run. It is impossible to give these birds range, but each pen gets half a day a week on the alfalfa run. In addition to this each pen contains a little bed of alfalfa covered with wire for the birds to pick at. A flat box for chopped greens is also provided and this is filled every morning. The birds nibble and scratch and often fill their crops so full of green that they have no room for grain. "If my birds only get enough green," said their mistress, "I don't care whether they get much grain or not."

The breeding houses are not open front, like the other buildings, but each has a large south window and an east door, so there is no question about ventilation.

The long laying house is on the roosting-house-scratching-shed plan, each house having accommodations for 50 pullets. The pullets are placed rather high up in the scratching room instead of below the droppings board, as is the case in many houses. In fact, there are no droppings boards, for Mrs. Martin has hit on what she considers a better plan. The roosts are quite high above the ground, and below them, where the droppings board is usually found, is stretched coarse poultry netting. The droppings fall through this and lie in the dust, where the birds cannot reach them until they are removed. The advantage of this plan seems to be that when it is not possible to remove the droppings daily—and it is rarely possible to do this—they are out of the way and too far beneath the birds to do any harm. Shavings are used for nest litter because the hens do not scratch them out of the nests as they do straw.

(Continued on Page 693)

Increased Production

The standard of poultry living and profit can be preserved and greatly increased by feeding

Coulson's Egg Food

When you take up a handful of Coulson's Egg Food you scarcely realize that you are looking at a dozen or two dozen eggs. But such is the case. The hen utilizes this food in the production of her eggs. It gives her the elements out of which she manufactures her product.

Coulson's Egg Food is not a stimulant—it is a food, and as such acts as an AID to egg production.

By insisting on Coulson's Egg Food—by refusing substitutes—you will be paving the way for a good yield from your flock, and at the same time giving your birds the VERY BEST at no additional cost.

Send for our free book, "Chickens." It is intensely interesting and instructive.

COULSON COMPANY

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Baby Chicks: Standard Bred; The best to be had are shipped by us every week in the year. Also Petaluma's best utility stock. Price-list and pamphlet mailed free upon request.

Now booking orders for Fall and Spring delivery.

Thomas Hatchery, Petaluma, Cal., Route D.

BABY CHICKS and EGGS

We will book your order for Chicks or Eggs for future delivery.
WHITE LEGHORNS, BLACK MONORCAS AND R. I. REDS OUR SPECIALTY.
Our Chicks are hatched in the
BEST VENTILATED HATCHERY IN CALIFORNIA.
INSTRUCTIONS HOW TO RAISE CHICKS FREE.

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Too many cheap incubators—**too many wasted eggs — too many weak chicks**—too many disappointments—too much money lost with poorly constructed machines. You can't afford to fool with them. **The Queen is built to hatch without trouble.** 14 valuable improvements on 1915 Model. Read about them in my free book.

Queen Incubator Co., 127 Bryan Ave. Lincoln, Neb.

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Poultry Supplies of all kinds

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Write for Complete Catalogue and Prices.

Sutherland's Brooder Works

PETALUMA, CALIFORNIA

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200,000 FEET CHEAP

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(Under entirely new mngmt.)

C & S AXLE & GREASE
LARGE HANDY BUCKET
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Right now we can supply every week many kinds of chicks. Can supply laying pullets of most every variety, also cocks, laying hens, etc. Write us.

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TREES

I want unimproved citrus land or other good realty unincumbered.

Will give one or two-year citrus nursery trees, unexcelled in

(a) Character. Fruit buds only of unusual trees. None more highly bred for results.
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(c) Culture. Color, vigor, caliper result from best soil, climate and water known.

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For Sale—10000 VALENCIA LATE
5000 MARSH SEEDLESS GRAPEFRUIT
8000 EUREKA LEMONS
12000 WASHINGTON NAVELS
Softland trees, perfect in quality, grown by us. Lowest price. Will plant if desired. Consider some exchange—now is most favorable time to make contract for next spring planting. Write or phone today for prices. Phone 559. Ward Realty Co., San Dimas, Cal.

We Have Made a Specialty of Placentia Perfection Walnuts on native black root for a number of years, and are offering the finest trees we have ever grown this year. 80 per cent of our stock is eight feet and up. The scions used were taken from trees in our large orchard that have made a very high record for the past five years. Good Ancestry Pays. Nursery at Villa Park. Hugh T. Thomson, Orange, Cal., R. F. D. 1.

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Home-Grown Fruit Trees—Largest assortment, including thousands of Royal Apricots, Tuscan and Phillips Cling Peaches, Pears, Apples, Figs, Grapes, etc., etc. Guaranteed true to name; strong, healthy and well rooted. Special low prices on application. Orange County Nursery & Land Co., Fullerton, Cal.

For Sale—At Corning, 4,000 Mission Olive trees from three to seven feet in height. Cuttings selected from the best producing orchards at Corning. Trees mostly two years old in March. Address Midland Counties Land & Irrigation Co., First National Bank Bldg., San Francisco.

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Grafted Walnut Trees on Northern California Black Root. Special price, must be moved. Placentia Perfection, Chase, Eureka, Mayette, El Monte Large, etc. Both phones 6971, Whittier Nursery, 803 West Philadelphia St., Whittier, Cal.

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The Walnut Nursery has a fine lot of grafted walnut trees again this season, Chase, Eureka, Mayette and Placentia Perfection. Order now and get the best. W. A. Litten, Prop., R. F. D. No. 2, Whittier, Cal. Home phone 7863.

Walnuts—Choice seedlings, 10c up; also grafted Chase and Placentias. Now contracting citrus and avocados for spring planting. Magnolia Nursery, Whittier, Cal.

Potrero Heights Walnut Nursery—Placentia Perfection Walnuts a specialty. Native Black Walnut roots. Get my prices and order early. Address A. H. Jessup, San Gabriel, Cal., Route 2.

The 1200-Acre Nursery, growers of 1500 varieties of trees and plants. OREGON NURSERY CO., Orenco, Oregon. Sales office, 522 Chamber Commerce, Los Angeles, Cal.

Budded Avocados in all the leading varieties, also Feijoas, Guavas, and Mangoes. Write for prices. Edgemont Avocado Nursery, R.F.D. 2, Box 213, Pasadena, Cal.

Fine Placentia Perfection Walnut Trees, grafted on Native Black. Also late Valencia and Eureka Lemon trees. Prices reasonable. Write for prices. Perry Lewis, Box D, Tustin, Cal.

Fig Trees—2000 Calimyrna (Smyrna) and Caprifig trees for sale. Make offer for one or all. Strong, well grown stock. W. F. Lowe, Roberts P. O., Cal.

Royal and Tilton Apricots, Phillips and Tuscan Cling Peaches, 5 to 8 feet, $20 per 100; $180 per 1000. K. B. Utigaard, Hemet, Cal.

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Citrus Nurseries, Murphy Oil Company, East Whittier, California. Selected stock for sale; inspection invited.

Before Planting Olives, Avocados, Feijoas, Rhubarb or Cactus, get my free booklet. Bishop's Nursery, Highland, Cal.

TREES

Peach Seedlings—Twenty thousand, all sizes and prices. Must be ordered before January 20th, 1915. Pay on delivery. A thousand pounds of Pollock's strain of Rocky Ford Canteloupe seed. If you want profits, try it. A few of Burbank's latest creations, Beauty and Formosa Plum. Standard prune trees and scions for grafting. Grafted walnuts and ten thousand black walnuts. All guaranteed to be as good as any at any price. A. P. Henning, Clements, Cal.

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Walnut Trees, Wilson Wonder, Franquette—Budded on Northern Black Walnut root. Eucalyptus trees in large quantities. Prices right. Ekstein Nurseries, Modesto, Cal.

For Sale—Excellent citrus trees, Valencia 1600, Navel 1500, Eureka lemons 2400, ⅝ up. Price loose, 15c; baled, 23c F.O.B. Budded with fruit buds after freeze. Address B. C. Dodson, Glendora, Cal.

Apricots, Royal and Newcastle Pears, Apples, Peaches, Cling and Freestone guaranteed, large trees. Don't buy until you get our prices, which are cheap. Newton & Cavanah, Nurserymen, Hemet, Cal.

For Sale—Grafted walnuts on black and soft root, oranges, lemons, apricots, peaches, everything in the nursery line. Get my prices. A. R. Marshall's Nurseries, Box 64, Santa Ana, Cal.

Franquette and Mayette grafted on Northern California Black, 3 to 10 feet. Prices right. Special discount on large orders Sunset Nursery, 525 W. San Carlos St. San Jose, Cal.

Budded Citrus Trees and seedlings at fair prices. Will take auto or land. Butler's **Morning Side Nursery**, P. O. Box Lamanda Park, Cal.

Have Some Fine Valencia and Eureka Lemon trees, ⅝ inch and up. Will sell or exchange for land, automobile, cows, chickens. C. W. Bouldin, Azusa, Cal.

MACHINERY

USED WINDMILLS, TANK, PUMPS, ENGINES, RANCH MACHINERY
SPECIAL SALE TILL JAN. 1ST

Aermotor windmills with steel tower	$35.00
Brand new 2000-gallon galvanized tank	$29.50
7,000 gallon redwood tank	39.50
12,000 gallon redwood tank	55.00
15,000 gallon redwood tank	68.00
25,000 gallon redwood tank	85.00
50,000 gallon redwood tank	95.00

ENGINES ENGINES

3 H. P. Fairbanks $45; new 4 H. P. Witte, $67.50; 5 H. P. $95; 7 H. P. $115; 18 H. P. Union $195; 20 Lambert $195; 28 Lambert $295; also many others all guaranteed first class.

HENDERSON MOTORCYCLE

nearly new, four cylinder, 1913, with tandem; cost $350, for only $125 cash, or trade for ranch machinery.

FINE $100 REMINGTON TYPEWRITER

Will swap for mowing machine, rake or other tools.

ODDS, ENDS

Post drill $7; heavy drill $25; water meter $5; shovels and picks 20c; pipe fittings, sundries.

RANCH MACHINERY

Two Holt tractors, mowers, rakes, scrapers, plows, harrows, cultivators, potato and beet machinery.

WANT TO BUY IRRIGATING PIPE AND RANCH TOOLS OF ALL KINDS.
SPECIAL SALE ON PUMPS, ALL KINDS

Material fully guaranteed; save half. Pioneers in our line. OFFICE DEMMITT CO., UPSTAIRS, 120 N. Main, Los Angeles.

Gas engines, centrifugal and deep well pumps, motors, and everything pertaining to irrigation, for sale and exchange. If you want a complete plant or any part write us; we are experts in irrigation; advice and estimates cheerfully given. Will buy, sell or exchange. Reliable and responsible, everything guaranteed as represented. Machinery & Motor Exchange, Inc., 733-735 San Fernando St., Los Angeles. Main 6382, F-3433.

For Sale—Used and new gas engines, 2 H.P. up, rebuilt and fitted with modern equipment. 22 years' experience enables us to repair and rebuild gas engines correctly. Get our prices. Lloyd, 306 N. Main, Los Angeles.

For Sale—2500 new smudge pots at a sacrifice; also electrical thermometer alarm outfit complete with wiring. G. E. Kennedy, El Centro, Cal.

On account of moving one of our warehouses, we are making many special prices on gas engines, plows, harrows, land rollers, ridgers, drills, feed cutters, etc. Write for prices or call and see us. Newell Mathews Company, 200 N. Los Angeles St., Los Angeles.

BEES

Beekeeping Pays Big—Price list, bees, instruction books, etc., free. Spencer Apiaries Co., Box 14, Nordhoff, Cal.

POULTRY

BUFF ORPINGTONS
BOURBON RED TURKEYS
BUFF ORPINGTON DUCKS

First and seconds in all varieties. Orpingtons won first and third cock. First and second pullet at recent Pasadena Show. Breeding stock. Booking orders for hatching eggs and baby chicks. Ferris Poultry Ranch, S. Reservoir St., Pomona, Cal.

How to Make Money—Mrs. A. Basley's latest Poultry Book is without exception the best ever written. The secret of how to raise every turkey hatched and the "Basley Formulas," now published for the first time, are worth many times the price of the book. The "Western Poultry Book" is a practical book by a practical woman. Price, $1. Order from Cultivator Publishing Co.

For Sale—12 White Plymouth Rock hens, 1½ years old, and 5 March pullets same breed, all hatched from eggs bought direct from Emerson & Mumford, the blue ribbon stock of the Coast, $2 each or $1.75 each for the lot. Also a 108-egg Jubilee incubator and Reliance brooder, in A1 condition, for $20.00, prepaid; cost $29.00. W. A. Lee, Covina, Cal.

Macfarland Strain White Leghorn eggs $5 per 100, chicks, Jan., Feb., $12, afterward $10, order now, any quantity Cockerels $2. White Rock eggs, chicks, cockerels; write for prices. Big plant, best stock, lowest prices. Newton Poultry Farm, Dept. 3, Los Gatos, Cal. N. B.—See article about us by Prof. Adams, U. C., in October Poultrycraft.

White Leghorn baby chicks from McFarland Strain, from two years old hens; there is no better laying strain than this. You cannot succeed in the poultry business with poor stock. I guarantee safe arrival by express. My specialty is pleasing my customers. Chicks $10.00 per 100. Book your order for Spring delivery now. $2.00 per hundred with the order. J. W. Lyon, Gardena, Los Angeles Co., Cal.

S. C. White Leghorn Baby Chicks—From my pure-bred flocks S. C. White Leghorns, carefully selected for laying and Standard qualities, $9.00 per 100, $85.00 per 1000. A first class chick at a reasonable price. Eggs for hatching, $5.00 per 100, $45.00 per 1000. Correspondence solicited. J. R. Heinrich Poultry Yards, Arroyo Grande, Cal.

Incubator Chicks—White Rock, Rhode Island Red, Black Minorca, White, Brown and Buff Leghorn, and Indian Runner Ducks, high class stock—Standard bred and Hoganized. Send for booklet of prices and make your contracts now. Mahajo Farm, P. O. Box 597, Sacramento, Cal.

Rhode Island Red and Barred Plymouth Rock baby chicks, $12.50 per hundred. The hens are now through the moult; their eggs are hatching fine strong chicks. There is plenty of green feed for young chicks. There is money made in early Spring chickens. J. W. Lyon, Gardena, Cal.

Baby Chicks and eggs for hatching. White Leghorns (McFarland strain), Buff Leghorns and Rhode Island Reds (Harrison strain) Baby Chicks $12.50 per 100, $100.00 per thousand. Eggs $5.00 per 100, $45.00 per thousand. Term 10% with order. Book orders only. H. E. Thomas, Box 93, Palms, Cal.

Poultry Wanted—We pay the highest market price for all the local poultry we can get, no matter how large the quantity; also fresh ranch eggs. We remit immediately. National Poultry Co., successors to Allaway & Layton Co., 607 E. Third St., Los Angeles, Cal.

Blue Ribbon White Wyandottes—First prize winners at Santa Ana, Orange and Los Angeles. Eggs from first pen, all 2 year old hens, $2.00 per 13. $3.50 per 26. Other pens, all No. 1 stock, $1.50 per 13. Buena Park Nursery, Fullerton, Cal.

Rhode Island Reds and S. C. W. Leghorns; greatest laying strains in California. Baby chicks: Reds, $15.00 per hundred; Leghorns, $12.50. Rainescourt Poultry Ranch, Zelza, Cal.

Pullets—Thoroughbred stock—Golden Buff Leghorns—Sheppard's strain Ancona—White Leghorn—White Minorca hens—baby chicks and eggs. Prices reasonable. Sand Ridge Hatchery, Kerman, Cal.

Berry Plants and Belgian Hares delivered free. Brahma Cockerels from Oakland and S. F. Winners. Catalogue free. Old Hickory Supply Co., Dept. 4, Capitola, Cal.

Booking Orders for Hatching Eggs from S. C. White Leghorns, utility birds; selected stock, $6.00 per 100; $50.00 per 1000. No baby chicks. Pine Tree Poultry Farm, Los Gatos, Cal.

Barred Rock Cockerels—(Hawkins Royal Blue Strain) ready for mating, also Barred Rock, R. I. Red, Buff and White Orpington day-old chicks every week. Enoch Crews, Santa Cruz, Cal.

Baby Chicks (White Leghorns)—Shipped on approval. Examine at your home before remitting. No weak ones charged for. Schellville Hatchery, Sonoma, Cal.

Barred Plymouth Rocks—Winners at New York, Kansas and California shows. Eggs and choice stock for sale. C. H. Vodden, Los Gatos, Cal.

Trapnested White and Buff Leghorns, records 120-279 eggs per year. Eggs, chicks, stock. Arthur R. Schroeder, R. 18, Box 179-D, Mountain View, Cal.

Petaluma Hatchery—Now booking orders for December and January. Early chicks bring big money. Send for circular. L. W. Clark, Petaluma, Cal.

S. C. Black Minorca cockerels; choice birds, $2.00 up. Also a few Buff Minorcas. Mrs. N. Schillings, Alpaugh, Cal.

Barred Rocks—Only a few fine breeding cockerels for $3.00 each. G. L. Hawley, Madera, Cal.

White Plymouth Rock Cockerels, standard bred birds. Ramona Farm., Box 1361, R. D. 2, Sacramento, Cal.

LIVE STOCK

Ohio Improved Chester White (O. I. C.) Entire herd immunized against hog cholera.
Nothing but immunized stock sent out. Extra fine lot of fall pigs, both sexes, ready for shipment during December and January. Three herd boars used. All stock crated and registered. Make reservations now. C. B. Cunningham, Mills, Sacramento Co., Cal.

Grape Wild Farm Thoroughbreds—Guernsey Bulls of A. R. Breeding. BERKSHIRE HOGS. Finest herd in the state All ages for sale. A. B. Humphrey, proprietor. Mayhews, Sacramento Co., California.

For Sale—Young Hampshire boars of good stock; yearling GUERNSEY BULL from Imp. Lord Kitchener. Dr. J. W. Anderson, 503 First Nat'l Bank Bldg., Berkeley, Cal.

For Sale—Young registered Berkshire boars and sows; fine, strong stock. Boars ready for service—January. Stanislaus Ranch Co., Crows Landing, Cal.

Thoroughbred Berkshire Boars of all ages from developed and large-boned hogs Riccomi Bros., Mountain View, Cal.

Glenview Poland China—Stock for sale. Chas. R. Hanna, R. F. D. No. 3. Riverside, Cal.

M. H. Locke Co., Lockeford, Cal.—Choice young Jersey bulls for sale.

FARM LANDS FOR SALE

VICTORIA, AUSTRALIA, WANTS SETTLERS

Special inducements; government land, railways, two schools; cheap irrigation; 31 years to pay for farms adapted to alfalfa, corn, grains, fruit, etc.; climate like California; ample markets; reduced passages; special excursion being arranged. Free particulars from F. T. A. Fricke, Government Representative from Victoria, 687 Market St., San Francisco, Cal., Box X.

For Sale—100 acres four miles from Hickman, under Turlock system. 50 acres in alfalfa. 50 acres in milo maize. Fine seven room house, modern and large barn. Price $30,000. Will take house in Los Angeles $5000, cash $6000, balance mortgage. This includes 1 cow, three horses, 1 wagon, 1 cultivator, 1 scraper, 1 mower, 1 rake. Large live oaks and elms. Only 14 miles from Modesto. Addi A. Sexton, 423 S. Garfield, Alhambra, Cal.

A Double Your Money Land Buy—312 acres near Watsonville, all first class fruit soil. Fine dairy or stock ranch, splendid buildings, well watered. 7 acre family orchard. Adjoining land, same class, held at $200 an acre. $95 an acre buys this, part cash, part city property, balance easy terms. If you're looking for a giltedge investment, write for full description and photos. E. STEINHAUSER, WATSONVILLE, CAL.

Apple Orchards—Large and small, in the only apple producing section in California. The greatest section west of Missouri River. Write for booklet. Geo. W. Sill & Co., Watsonville, Cal.

For Sale—800 acres, large and small tracts, Pittsburg County; farming, pasture, oil and gas land. $5 to $25 per acre. Write JOHN CAVANAGH, McAlester, Okla.

A Splendid Chicken and Fruit Ranch, improved, 80 acres, very cheap at $3000. Address owner, A. Frederikson, Santa Maria, Cal.

MISCELLANEOUS

St. Joseph's Agricultural Institute, Rutherford, Napa Co., Cal. An Agricultural High School for boarding students. A thorough training given in the theory and practice of diversified farming. The school is located on a thousand acre farm. The students assist in all the branches of work conducted on the farm, plowing, seeding, cultivating, orchard and vineyard work, dairying, hog raising, poultry raising, etc., thereby acquiring a practical knowledge of agriculture which is of equal importance to the theory. The Eighth grade is also conducted, as a preparatory class. The fee for board and tuition is very reasonable. Classes reopen on January 4th, 1915. For further information apply to the President, Bro. Thomas H. Claffy, S. M.

We are preparing to move from one of our warehouses to a new one, and find hundreds of items that we wish to close out quickly. Plows, Harrows, Land Rollers, Ridgers, Drills, Transplanters, Cultivators, Mowers, Rakes, Feed Cutters, Cream Separators, Milk Cans, Pails, Barn Equipment, Gas Engines, Scrapers, Vehicles, Wagons, Trucks, Garden Tools, etc. Prices sharply reduced. Write or call and see us. Newell Mathews Company, 200 N. Los Angeles St., Los Angeles.

Free for Six Months—My special offer to introduce my magazine "INVESTING FOR PROFIT." It is worth $10 a copy to anyone who has been getting poorer while the rich, richer. It demonstrates the REAL earning power of money, and shows how anyone, no matter how poor, CAN acquire riches. INVESTING FOR PROFIT is the only progressive financial journal published. It shows how $100 grows to $2200. Write NOW and I'll send it six months free. H. L. Barber, 430, 28 W. Jackson Blvd., Chicago.

For Sale—Alhambra, 25 minutes from Los Angeles, new modern six-room bungalow on good street, close to school and new public library. $3000 with $800 mortgage. Will take $300 cash, balance second mortgage. Addi A. Sexton, 423 S. Garfield Ave., Alhambra, Cal.

"Smith's Pay the Freight"—To reduce the high cost of living, send for our Wholesale to Consumer Catalogue. Smith's Cash Store, 112 Clay St., San Francisco.

HELP WANTED

Wanted—3 or 4 berry growers to come to SANTA CRUZ, CAL., to grow berry plants for us under contract for 5 years; will also buy all the fresh berries when we put up our new berry-drier in 1916. We will guarantee that you will double your money each year. We need 1,000,000 berry plants grown each season, and also use 100 tons of berries for our drier. Send for particulars to SANTA CRUZ BULB & PLANT CO., 8 NEW ST., SANTA CRUZ, CAL.

HORTICULTURAL PRINTING

Catalogues for the seed and nursery trade. The live stock and poultry industries are a specialty with us. Two thousand illustrations to select from. Write for prices and samples. The Kruckeberg Press, 237 Franklin St., Los Angeles.

TURKEYS

For Sale—Mammoth White Holland Turkeys. Mature hens and toms. ALSO young stock from five distinct pens headed by toms from yards of leading breeders of this breed in the state. EGGS IN SEASON. Orders given prompt attention. Prices on application. Address H. McKusick, Box 733, Calexico Imperial Co., Cal.

Thoroughbred Mamomth White Holland Turkeys from strong, vigorous prize winning birds, thoroughly domesticated; the stay at home kind. Eggs in season. Orders given prompt attention. Prices on application. Mrs. E. H. Broadwell, Crows Landing, Cal.

Mammoth Bronze Turkeys—Strong, vigorous, well marked toms and hens from the best blood of prize winning and utility stock. Prices reasonable. Geo. A Smith, Corcoran, Cal.

Sharp's White Holland Turkeys made a clean sweep at California State Fair, including sweepstakes. And also at Fresno County Fair. Also snow white Leghorns; stock for sale. Henry Sharp, R. 2, Box 70, Selma, Fresno Co., Cal.

Red Bourbon Turkeys for sale. First prize winning birds. 3 pairs breeders 1½ and 2 years old, and younger stock. Some fine young toms and pullets. A. E. Balmer, Alhambra Valley, Martinez.

Giant Bronze Turkey Toms from prize winning stock; weigh over 20 lbs. at 8 months. Write for prices. Mrs. Nellie Hart, Holtville, Cal.

IMPLEMENTS

We are preparing to move from one of our warehouses to a new one, and find hundreds of items that we wish to close out quickly. Plows, Harrows, Land Rollers, Ridgers, Drills, Transplanters, Cultivators, Mowers, Rakes, Feed Cutters, Cream Separators, Barn Equipment, Gas Engines, Scrapers, Vehicles, Wagons, Trucks, Garden Tools, Milk Cans, Pails, etc. Prices sharply reduced. Write or call and see us. Newell Mathews Company, 200 N. Los Angeles St., Los Angeles.

SEEDS AND PLANTS

Mention the Cultivator in your present or future delivery orders for citrus trees or spineless cactus. Luther Burbank & Mediterranean Spineless Cactus Plantations and Robinson Citrus Nurseries, San Dimas, Cal., R. F. D. 35A.

Strawberry Plants — Gold Dollar, Clark Seedlings, Magoons, Wm. Belt, Marshalls, Goodells, Early Ozark, and new Oregons, $2.50 per thousand. Thoroughbred plants. Mr. John Christiansen, R. F. D. 2, Canby, Oregon.

Strawberry Plants—Inspected, packed in moss; 5th year. Magoon, Marshall, Klondyke, New Oregon, Early Ozarks, Hood River, $2.50 per 1000. J. W. Vinacke, Canby, Oregon.

Berry Plants, Rhubarb, Cacti—It will be worth your while to send me a postal right now if you are interested. Louis F. Scribner, P. 2, Pasadena, Cal.

Rhubarb—Crimson Winter, $3.00 per hundred; Wagner's Giant, $5.00 per hundred. Good, strong, one-year plants. Currier Bulb Co., Seabright, Cal.

For Sale—Avocado Seed, also fine budded "Taft" Avocado trees. C. P. Taft, Orange, Cal.

For Sale—Beldi Barley, clean for seed. H. Pile, Ramona, Cal.

Brandywine Strawberry ,Plants — Fine large plants. J. H. Shirk, Tulare, Cal.

RABBITS

For Sale—New Zealand Rabbits. "The best meat producers." A grand bunch of fine, red, half-grown youngsters, 1 buck and 3 does for $5.00. Also mature stock. Your chance to secure a start of this splendid strain at small cost. Shipped anywhere. Standard Rabbitry, Santa Ana, Cal.

New Zealand Reds—Scored and sold on merit. Investigate. Our Catalogue is free. Caldwell Bros., Los Angeles, Cal., Box 613.

WANTED

Wanted—To rent a dairy on the shares by experienced dairyman. 1347•E. 27th St., Los Angeles, Cal.

Single man, experienced Eastern farmer and poultryman, wants position, salary or on shares. Address F. C. Kilbourn, c|o L. W. Holland, Watts, Cal.

San Francisco-Los Angeles Markets

Los Angeles Market

LOS ANGELES, Dec. 30, 1914.

The prices given below, except where otherwise noted, are those made by wholesale or commission houses to retailers, and are intended to give producers the range of the market rather than an indication of prices which they will secure. Jobbers' quotations to producers are not given.

BUTTER

Prices to trade 4 cents above following quotations:

Creamery Extras	.30
First	.28
Country	.23
Ladle	.22

CHEESE

Prices to trade, 1 and 2 cents higher:

California Fresh	15@15½
Domestic Swiss	.20@21
Eastern Daisy	18½@19
Longhorn	18½@19
Imported Swiss	.36@38
Oregon Triplets	17@17½

EGGS AND POULTRY

Prices to trade, 3 cents higher than following quotations:

Fresh ranch, case counts	.45
Candled	.49
Northern Case Counts	.53
Petaluma-Santa Rosa	.54

Prices to producers:

Hens, lb.	15@18
Roosters, old	.9
Broilers, lb.	.26
Fryers	.20
Roasters, lb.	.15
Turkeys	18@20
Ducks	17
Geese	.16
Squabs, doz.	2.00

LIVE STOCK

The following quotations are f. o. b. Los Angeles on all stock:

Hogs, 175 to 200 lbs., per cwt.	$7.75
Prime Steers	7¼@7½
Heifers	6¼@6½
Calves, lb.	8½@9
Sheep—	
Ewes, head	4.50
Wethers	4.50@5.00
Lambs, head	4.50@4.75

POTATOES

Wholesale selling price:

Idaho	1.35@1.45
Sweets, lug	.65@75
Northern Burbanks, cwt	1.35@1.45
Salinas	1.75@1.85
Shimas	1.50@1.60
Lompocs	1.70@1.80

VEGETABLES

Wholesale selling price:

Artichokes, Northern, doz.	1.00@1.15
Beets, doz.	.30@35
Beans, String	.11@12
Lima	.5@6
Cabbage	.65@75
Cranberries, bbl.	9.00@9.25
Casabas, doz.	1.25
Carrots, doz.	.30@35
Cauliflower, doz.	.60@70
Celery, crate, northern	2.25@2.50
Local	1.75@2.00
Cucumbers, hothouse	.75@1.50
Egg Plant	.7@8
Figs, box	1.75@2.00
Grapes	1.25@1.60
Escarole, doz.	.40
Horseradish, lb.	.9@11
Leeks, doz.	.35@40
Lettuce, crate	.80@90
Mint, doz.	.35@40
Okra, lb.	.9@10
Onions, Green, doz. bunches	.15@20
Oyster Plant	.30@35
Peas, lb.	.12@14
Parsnips, doz.	.25@30
Peppers—	
Bell, lb.	.5@6
Chili, lb.	.4@5
Pimientoes	.6@7
Pumpkins, lb.	.1@1½
Radish, doz.	.20@30
Rhubarb, box	.75@85
Spinach, doz.	.20
Squash—	
Summer, lug	1.25@1.40
Chayote, lug	.55@65
Crookneck	.45@55
Hubbard, lb.	1¼@1½
Turnips	.30@35
Tomatoes, lug	.85@1.00

FRESH FRUIT

Wholesale selling price:

Apples—	
Bellflowers	.75@1.00
Jonathans	1.35@1.60
Spitzenbergs	1.35@1.75
Guavas, basket	.5@7
Rome Beauty	1.25@1.35
Pearmains	.75@90
Bananas	3½@4
Berries—	
Strawberries, basket	.6@12
Blackberries	.13@15
Cranberries, bbl.	9.00@9.50
Figs, box	1.50@1.75
Grapes	1.25@1.50
Pears, Winter Nelis, lug	1.50
Persimmons, lb.	.5@8
Pineapples, lb.	.5@6
Pomegranates, box	1.50@1.75
Quinces	.75@85

CITRUS FRUIT

Wholesale selling price:

Lemons	1.75@2.50
Grapefruit, Seedless	2.25@2.50
Navels	1.75@2.00
Tangerines	1.50@1.75
Limes, basket	.75@1.00

HONEY

Wholesale selling price:

Comb, Fancy, Water White	.14
White	.12
Light Amber	.11
Extr. Water White	.7
White	.6
Light Amber	.5½
Beeswax	.32

RICE

Wholesale selling price:

California	4.75@5.00
Broken	3.50@3.75

BEANS

Wholesale selling price:

Producer's price not far from one dollar under these quotations:

Limas	5.60@5.75
Lady Washington	5.15@5.25
Pinks	4.15@4.25
Black Eyes	4.90@5.25
Lentils	8.00@9.00
Navy	5.25@5.35
Small White	4.80@4.90
Garbanzos	6.00@7.50

HAY

Buying prices f. o. b. cars Los Angeles:

Barley	10.00@11.00
Wheat Hay	10.00@11.00
Tame Oat	11.00@13.00
Alfalfa	9.00@11.00

GRAIN

Wholesale selling prices f. o. b. Los Angeles:

Corn, Yellow	2.00
Corn, White	2.10
Wheat	2.35@2.40
Oats, Red	1.95@2.35
Oats, White	1.90
Kaffir Corn	1.75
Millet	3.75
Popcorn	4.75@5.00
Egyptian Corn	1.85
Barley Seed	1.55
Milo Maize	1.75
Cal. Seed Oats	2.25
Rye	2.00
Sunflower Seed	6.50

FEED STUFF

Wholesale selling prices f. o. b. Los Angeles:

Bran, Heavy	1.60
Alfalfa Meal	1.05
Alfalfa Molasses, per cwt.	1.15
Beef Scraps	3.00
Beet Pulp	1.25
Cracked Corn, cwt.	2.05
Cracked Wheat, cwt.	2.50
Cotton Seed Meal	1.75
Bloodmeal	3.60
Bone Meal	[illegible]
Meat Meal	3.00
Bone, Green	1.85
Charcoal	1.90
Oil Cake Meal	2.15
Fish Meal	3.15@3.25
Rolled Oats	1.95
Rolled Barley	1.50
Middlings	1.70
Feed Meal	2.05
Oat and Wheat Middlings	1.70

San Francisco Market

SAN FRANCISCO, Dec. 29, 1914.

The prices given below, except where otherwise noted, are those made by wholesale or commission houses to retailers, and are intended to give producers the range of the market rather than an indication of prices which they will secure. Jobbers' quotations to producers are not given.

BUTTER

Prices to trade, 4 cents above following quotations:

Fancy Creamery	.29½
Seconds	.27½

CHEESE

Wholesaler to retailer.

Oregon Y. Am	.16
Young America	13@13½
California Flats	10@13
Cheddar	.20
Oregon Twins	.14½

EGGS AND POULTRY

Prices to trade 3 cents higher than following quotations:

Fancy Ranch	.53
Select Pullets	.43
Storage Extras	.31

Price to producer:

Hens, lb.	15@18
Eastern	16@19
Fryers	18@19
Roosters, old	.11
Roosters, young	16@17
Broilers	18@19
Ducks	15@17
Geese, pr.	2.00@2.50
Squabs	2.50@3.00
Belgian Hares, lb.	.9@10
Turkeys, live	16@19
Dressed	20@24

LIVE STOCK

San Francisco prices, gross weight:

Steers	4@7¼
Cows and Heifers	3@6¼
Calves, lb., live weight	6@9½
Hogs	5@7½
Wethers	6@6½
Ewes	5¼@5¾
Milk Lambs	7@7½

POTATOES

Wholesale selling price:

Delta Burbanks	1.00
Salinas Burbanks	1.50@1.70
Oregons	1.25@1.40
Idaho	1.00@1.15
Sweets, cwt.	1.75@1.95

ONIONS

Wholesale selling price:

Yellow	1.00@1.15
Bermudas, crate	.90@1.25
Garlic, new	10@12

VEGETABLES

Wholesale selling price:

Beans—	
Wax	.5@8
Strings	.8@12½
Limas	.6@10
Brussels Sprouts, lb.	.3@5
Cabbage, cwt.	1.00@1.25
Carrots, sack	.30@40
Celery, doz.	.10@20
Cucumbers, lug	1.25@1.50
Egg Plant, .lb.	.4@8
Lettuce—	
Southern	.50@85
Delta	1.25@1.75
Peppers—	
Bell, lb.	.3@5
Chili, lb.	.3@4
Squash, sack	.40@50
Summer, crate	.75@1.00
Tomatoes, lug	.30@75

FRESH FRUIT

Apples—	
Newtown Pippins	.85@1.25
Bananas, Hawaiian, bunch	1.25@1.75
Cranberries, bbl.	12.00@13.00
Grapes lug	.80@1.00
Pears, Winter Nelis, wrapped, box	1.25@1.50
Pomegranates, box	.50@1.00
Pineapples, lb.	.4@5
Persimmons	.50@1.00
Quinces, box	.25@40
Strawberries, chest	3.50@5.00

DRIED FRUITS

Wholesale prices are:

PRUNES—1914 crop, bulk basis: 30-40s, 7c; 40-50s, 6c; 50-60s, 6c; 60-70s, 6c; 70-80s, 6c; 80-90s, 6c; 90-100s, 6c. 1913 crop worth practically same prices. The above are for both Santa Clara prunes and stock from outside sections.

Other Fruits, 50-lb. boxes—	Standard	Ch.	Extra Ch.	Fcy.
Evaporated apples	...	4¾	5	5¾
Apricots	7½	8½	9	10½
Peaches	3¾	4	4¼	5½
Pears	7	8	9	10

NUTS

ALMONDS—Prices fixed by Almond Growers' Exchange to the trade, f. o. b. California:

Nonpareil	.21
I X L	.20
Ne Plus Ultra	.19
Drakes	.18

Wholesale selling price:

Peanuts—	
Unpolished	5@[illegible]
Polished	6@6½
Japanese, Shelled	6¼@6¾
Italian Chestnuts	6½@7

BEANS

Wholesale selling price:

Limas	5.40@5.50
Lady Washington	3.60@3.75
Pink	3.55@3.65
Black Eye	4.25@4.40
Cranberry	4.35@4.50
Small White	3.55@3.65
Garbanzos	5.75@6.00
Large White	4.30@4.40
Bayos	[illegible]
Manchurian Speckled Bayous	3.50@3.75
Manchurian Butters	3.90@4.10
Manchurian Cranberry	4.15@4.25
Red Mexican	545@5.55
Red Kidney	5.50@5.75
Horse Beans	3.00@4.00
Bayou	5.35@5.50

HONEY

Comb, Water White	14@16
Comb, Water White	14@[illegible]
Amber	10@12
Dark	7@10
Extracted White	[illegible]
Light Amber	6½
Dark	4@5½
Beeswax	27@32

HOPS

1914

Sacramento Valley	7@9½
Sonoma-Mendocino	9½@11½
Oregon Clusters	9½@11½

HAY

Fancy Wheat Hay, lt. bales	11.00@12.00
No. 1 Wheat or Wheat and Oat	9.00@10.00
No. 2 Wheat or Wheat and Oat	6.00@8.50
Choice Tame Oat	10.50@12.00
Other Tame Oat	6.00@9.00
Barley	5.00@8.50
Wild Oat	6.00@8.00
Alfalfa	6.00@9.00
Stock Hay	4.50@5.00
Straw	30@45

GRAIN

Wholesale prices.

Alfalfa Seed	14@16
Wheat, Cal. Club	2.05@2.07½
Corn, Eastern Yellow, blk.	1.55@1.57½
Corn, Egyptian White	1.55@1.57½
Barley, Feed	1.25@1.30
Shipping and Brewing	1.26¾@1.27½
Oats, White	1.55@1.60
Oats, Red, Seed	1.35@1.45
Oats, Red, Feed	1.25@1.35
Millet	3@3¼
Flax	6@6½
Rye	1.50@1.60
Sunflower	5@5½

FEED STUFF

Wholesale prices.

Alfalfa Meal, car lots	14.00@14.50
Bran, ton	27.50@29.00
Feed Cornmeal, ton	38.00@38.50
Cracked Corn	38.00@38.50
Rolled Barley, ton	27.50@28.50
Rolled Oats, ton	37.00@37.50
Middlings	32.00@33.00
Shorts	28.50@29.50
Oilcake Meal	36.00@37.50
Cocoanut Oilcake Meal	23.00@24.00

Citrus Fruit Market

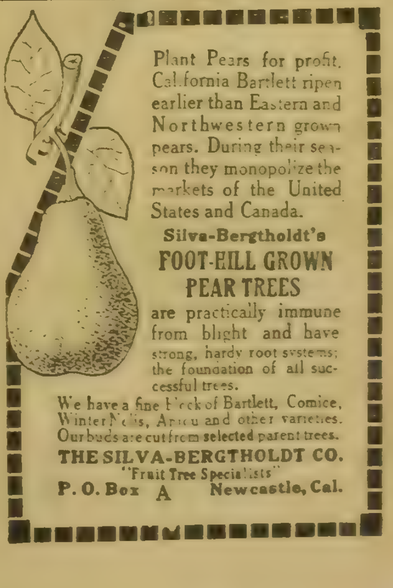
LOS ANGELES, Dec. 29, 1914.

The eastern orange market is badly shot to pieces by the extremely cold weather. Many cars are stored in roundhouses, but owing to the immense number, probably over 600, on track in various markets, such protection is impossible to any extent. Some fruit is freezing, many cars having the lower tier affected. With good market, buyers have consented to shading prices on the injured fruit only; at present they are demanding discounts on the entire car. Shipping is stopping, and it is hoped the condition will be corrected in a short time. If it is, north of Tehachapi fruit will practically all be forwarded before the end of next week. Florida's fruit is feeling the effect of the depression more than is California's. There were 30,000 boxes of Florida fruit sold in New York last week; these averaged $1.86, this against $2.30 last year. California fruit is averaging $2.07, as against $2.09 same week last year.

The lemon market is slightly improved; nearly all Californias are going into storage rather than take chances with the present weather.

Shipments

Shipments of oranges to date from Southern California since November 1, 880 cars, lemons 452, total 1332. To same date last year: Oranges 873, lemons 225, total 1098. From Tulare County this year: Oranges 4050, lemons 81, total 4131. Last season: Oranges 3683, lemons 15, total 3698. From Butte County this season: Oranges 431, last season 322.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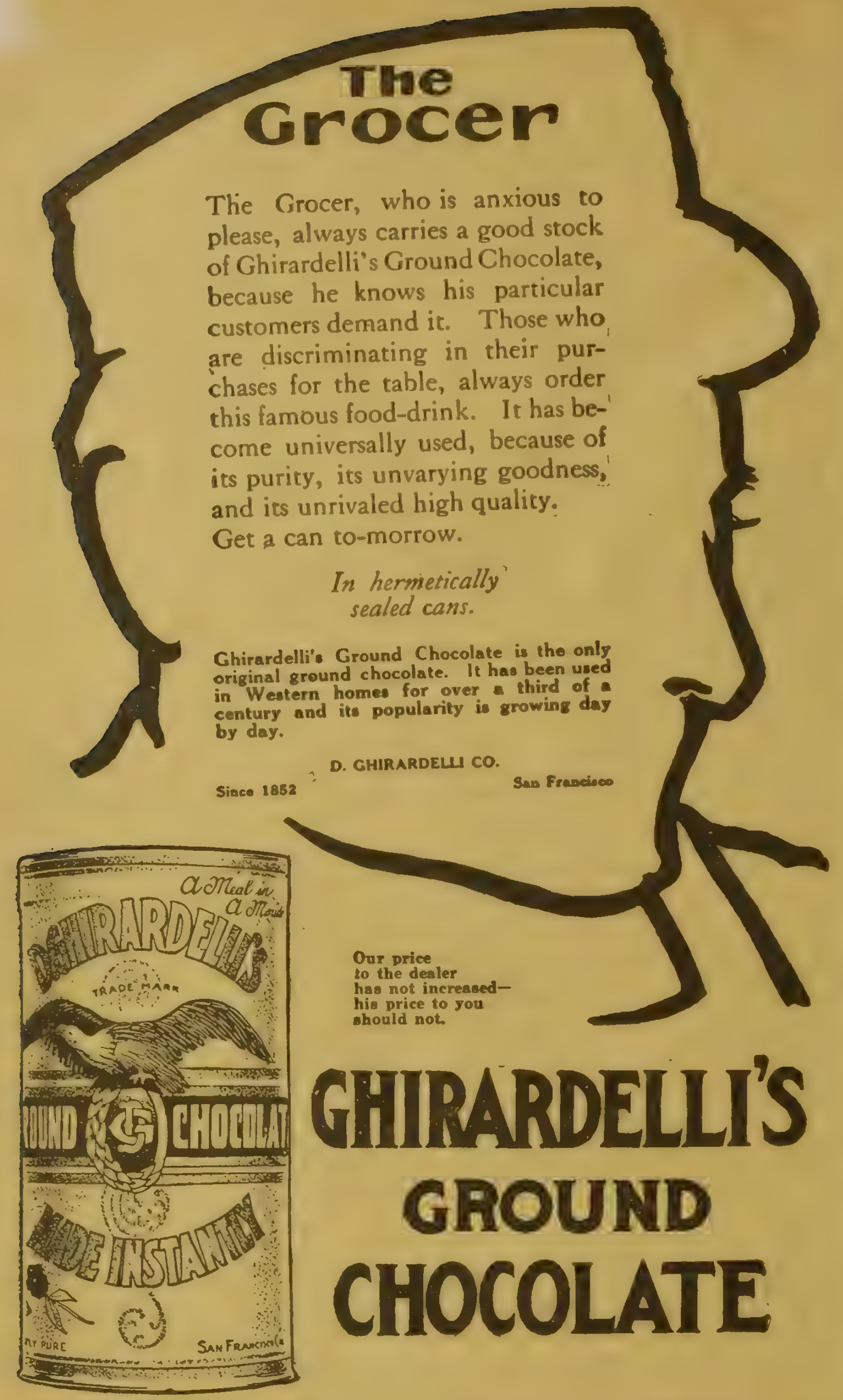

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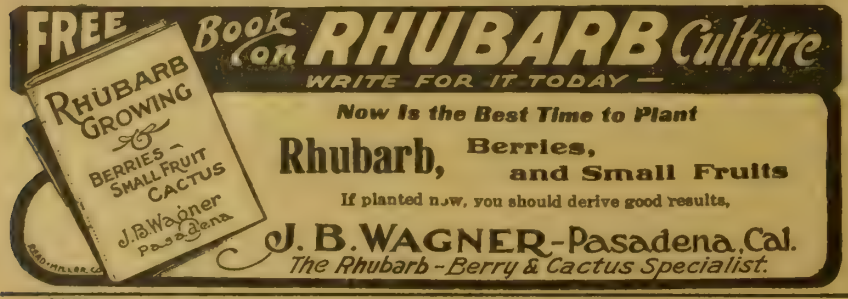

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The Household Department

A NEW YEAR'S WISH

If I could wish a New Year's wish
  For all the world today,
It would be that no one need miss
  The joys along life's way.
As flowers hiding in the grass,
  So sweetest joys are found
Waiting to bless us as we pass—
  If we will but look 'round.

If I could give a New Year's gift
  For all the world today,
It would be eyes to see the rift
  In every cloud of gray.
As fire-flies shining in the night
  Make bright a little space,
So through each cloud a ray of light
  Shines in the darkest place.

If I could on this New Year's day
  Go forth to all the earth
And take a message, I would say:
  Seek out the things of worth.
As children make believe in play
  That they are queens and kings,
Begin today and think and say:
  I own all grand, great things.

So I would go to men and say,
  On this, the glad New Year,
"Life offers you all good today;
  Accept it now and here.
Keep in your heart the gift of love,
  And all days will be glad,
For love will lift your soul above
  The things that make life sad."

A NEW YEAR'S WISH

So may the New Year be a happy one to you, happy to many more whose happiness depends on you. So may each year be happier than the last.—Charles Dickens.

THE DEACON'S NEW YEAR GIFT

The winter was cold, and the deacon was lonesome; his fireside was bright, to be sure, but he knew that a bright-eyed woman would make it much brighter. So, as he got on his horse and rode over to town, he was thinking about who the woman should be.

His way lay directly by the cozy cottage of Miss Huldah Hopkins, and out in the yard stood Miss Huldah herself, feeding her turkeys, her cheeks round and red as one of her best apples, her eyes, oh, well! the glance of those sparkling black eyes as she looked up and said, cheerily, "Good day, Deacon Perkins," sent the thought straight into the good man's mind—"Now there's the very woman I want! The dearest one in the world, too—I believe I've liked her this ever so long, without knowing it."

So the bay horse stopped at the fence and the deacon said:

"Huldah, I want to ask you a question."

"Ask it, then."

"Will you marry me?"

"Marry you? Are you crazy, Deacon Perkins?" Huldah blushed rosier, and that gave the deacon courage.

"No, I ain't crazy, but I'm lonely over in that big house. Come, Huldah, I'll do right by you, I will, indeed. Let's begin the New Year together."

"Oh, no, I thank you, Josiah. I don't care to change my condition."

"You won't change your mind, Huldah?"

"Indeed I won't!"

"Well, I don't want any other woman. Say, make me one promise, do."

"I don't suppose I will. But what is it?"

"If you do alter your mind, just come and tell me, honest. Will you?"

"I'll think about it."

Huldah would say no more, and the deacon rode away. She laughed as she went into the house. "The silly man! To think of such foolishness, at our age! Marry, indeed! Not if I know myself."

She laughed when she woke, next morning and thought of it. "At least, I needn't be an old maid unless I choose to," said she. "But I do choose, of course. Wonder how it would go to get breakfast for two? Bah! I've got all I want to do to get it for one. I know men. He's like all the rest. Let 'em go hang, for all o' me."

It had never fallen in Hulda's way to hear a great deal of the goodness or otherwise of Deacon Josiah Perkins. So it seemed to happen rather oddly that she began to learn something of his doings that very day. First she met the minister and he said, Good morning, Sister Hopkins. A fine morning!"

"So it is, parson. You look as bright as if you'd heard good news, too."

"I have sister, I have. What do you think, that blessed Deacon 'Siah Perkins has paid off the mortgage on the church, right spang out o' his own pocket. Now we'll begin the New Year free o' debt. I hope Goodness'll send him a mighty fine New Year's gift—he deserves it, the dear, good man."

"He didn't get the one he asked for, anyhow!" said Huldah with a laugh to herself, as the parson passed on. "But that was nice of him, sure."

The very next day she found out that Deacon Perkins was sending the two orphan children of Tom and Mary Weathers to school, and that he gave the little brown cottage down in Coon Hollow to Old Joe Black and his lame daughter, rent free.

"Why, land! I didn't know he was quite such a fellow!" she said, "Coon Hollow ain't much o' a place, but some men would a' made all they could out o' it. Wonder if a body couldn't live sort o' nice with him? Sakes! What nonsense in a woman o' my age! I'll stop it."

She had other things to think of, the rest of the day. It was New Year's eve, and she always made a little secret trip to old Polly Dorson's shabby little house on that night. For several years somebody had been in the habit of going to Polly's New Years's eve, and leaving a generous gift for the rheumatic old creature. Huldah didn't want to be left out of all the charitable deeds, so for this time she had resolved that she, too, would slyly visit the little cabin, that night. It was bright moonlight, so who was afraid? Besides, nobody, ever interruptel anybody else, out there in Bird's Glen. Huldah filled her biggest basket with golden pats of sweet butter, two loaves of snowy bread, a glass or two of crimson jelly, and a fine fat chicken, ready dressed for the oven, and took her way down the Hollow and up Polly's little yard, to put the basket on the porch.

Just as she stepped up the old doorstone, she almost gave a scream, for ther, stooping down before Polly's door, was a big man in a long overcoat. But Huldah didn't scream, for she knew that coat—the moonlight showed it plainly and showed her, too the huge basket filled with red apples, fat potatoes, plump turnips and a head or two of prize cabbage.

"So," said she, "you are the gool angel who comes to Old Polly every New Year, deacon!"

"Well, I don't look much like a angel, Huldah," responded Deacon 'Siah. "Sort o' seems to me you're out on the same business ain't you?"

Huldah laughed, and answered, softly, not to arouse Old Polly, "I've only followed the example you set me—but I didn't guess who 'twas till now. Josiah Perkins, you're a real good man!"

"But you don't 'low I'm good enough for you, Huldah," said he, ruefully.

"Come, let's go, we'll wake Polly," was all the answer Huldah gave him. But when they were a few steps from the house, she said, softly still, "I begin to think I ain't good enough for you, deacon."

"Have you changed your mind, Huldah? Say—have you?"

Huldah laughed, went a step or two from him, and answered, looking back:

"I believe I have, 'Siah!"

Perhaps the deacon didn't catch up with her right quick, then! And perhaps—oh, well, what matter if one was thirty-nine, and the other half way over forty?

Polly had her New Year gift—and the deacon had his, too.

MORE AVOCADO RECIPES

In addition to avocado recipes given in last week's issue, the following are from Tropical Fruits For California, issued by the West India Gardens, Altadena.

Costa Rican Style

Cut the fruit in half and remove the seed. In the cavity place one tablespoon of vinegar or lime juice; salt and pepper to taste. Serve one-half fruit on plate, with spoon, to each person.

Diced Avocado

Remove skin and cut fruit in small squares. Add salt, pepper and vinegar, or any kind of salad dressing desired.

Mexican Salad

To two parts of the diced fruit use one part of chopped Bermuda onion; salt, pepper and vinegar to taste, Sweet peppers, red or green, may be added if desired. Prepare two hours before serving.

Cuban Salad

Cut small fruit in half and remove seed. Prepare a dressing of a teaspoon of sugar dessolved in the juice of a lime or half a lemon. In the cavity of the fruit place three stuffed olives and the desired quantity of dressing. Serve one-half fruit on lettuce leaf to each person.

Simmons Salad

Half a medium sized fruit, two cold boiled potatoes, half a small onion, one tart apple. Slice all very fine and place in layers. Pour over it two tablespoons of vinegar. Let stand a while. Just before serving add mayonnaise mixed with one-half tablespoon curry powder and one tablespoon sugar.

Havana Style

Take the meat of three avocados, add three tomatoes, first removing skin and core; add half a green pepper cut into fine shreds. Crush this mass to a smooth mixture and drain off liquid. To the pulp add a teaspoon of salt and a tablespoon of lime juice or vinegar. Use with lettuce as salad or as sandwich filling.

Avocado-Date Salad

Peel avocados and dice, adding an equal quantity of chopped dates. Mix with mayonnaise and serve on lettuce.

Hawaiian Sandwich

Remove skin and seed from one avocado. Mash the flesh; add salt, pepper and a dash of vinegar or lime juice and spread liberally on lettuce leaf between thin slices of bread.

Avocado Butter

Pare the fruit and extract the seed. Mash the meat smooth and rub in one teaspoon of olive oil to every two fruits. Season with salt and pepper to taste, and spread on bread.

As a Dessert

The avocado makes a delicious dessert cut in cubes and served with sugar and lemon juice.

A WOMAN'S POULTRY PLANT

(Continued from Page 689)

When the cockerels are placed in their runs de luxe, the pullets are placed in similar coops in a large alfalfa field. This field contains perhaps an acre, maybe more. At any rate it is so large that the birds never eat up the alfalfa though they run on it from infancy to maturity. This field, like the rest of the place, is set to fruit trees, and where other shade is needed nasturtium vines are trained over the fences.

All the houses and coops are arranged with especial attention to facility in cleaning. Roosts are removable. The cockerel and pullet coops are so small and light that they can be tipped back every few weeks and soaked with disinfectants and sunshine. The little coops for the old males, which are covered with tarred paper, have hinged roofs, the hinges being at the front so that every part of the coop can easily be reached. All roosts and joints and ends of coops and houses adjoining the roosts are painted every week or two in summer, less often in winter, with carbolineum, which Mrs. Martin considers the best of all mite preventives. The "mighty mite" has no chance whatever with such a housekeeper chasing him.

The baby chicks are all hatched by hens. Mrs. Martin pointed with pride to a yard containing 30 or 40 nondescript hens, mostly Buff Orpingtons and Rhode Island Reds. "These are my mothers," she said, and they certainly looked a good deal more motherly than the cold-blooded incubators which are the regular thing on Leghorn plants. The hatching is done in the sitting coops with wire-covered runs, which are recommended by several experiment stations. These coops are built, 12 in a set, of thick, substantial lumber, so that they may be removed to fresh soil for each new brood, and are kept in a field away from the quarters of the older birds. Each hen remains in this enclosed run with her brood until weaning time, when the young birds are removed to the cockerel and pullet yards, and the mother goes back to her house. No hen is allowed to care for any more chicks than she hatches, be the number what it may, and only 13 eggs are given to a hen except in the warm weather of late spring. These sitting coops are about 14 inches square, with hinged roofs, and the covered runs are about six feet long. While the hen sits grain is growing in the runs all ready for the baby chicks to peck at as soon as they are out of the shell.

The feeding on this plant is very simple. Mrs. Martin follows no fads. If she has a hobby, it is green feed and sprouted grain. The growing stock is fed sprouted oats or barley daily, and this, with an alfalfa run, gives them what they need most. A trough of dry mash is always before them, and a little grain is thrown in the litter or dug into the ground twice a day. No yellow corn is fed and very little corn of any sort. Wheat is the chief grain used, outside of the sprouted oats and barley, and the allowance is never cut down because of high prices.

If I should venture to mention the thing which most impressed me about this poultry plant it would be, I think, the mothering and petting which the birds receive. And those "wild" Leghorns respond like pet kittens. The big cock in the conditioning coop cuddled his head in Mrs. Martin's neck like a baby, and the pullets came to meet us, talking and singing as the gentlest of the heavy breeds would. Leghorns may be merely egg machines, as the saying is, but they have a friendly, affectionate streak which can be cultivated, and which, for their highest development, must be cultivated.

SO TACTFUL!

Two young women, strangers, met on a Pullman car. They discovered that they had several common acquaintances in the city where they both resided and they spent a very enjoyable half hour together.

"I am just returning from a delightful trip," said one of them. "I have seen a lot of people from home, too. Isn't it strange," she added, confidentially, "how glad we are to meet people traveling that we would hardly notice at home?"

Bulbs

For fall and winter planting; also Flower Seeds for fall sowing. New Catalogue now ready, mailed free upon application.

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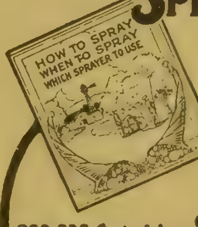

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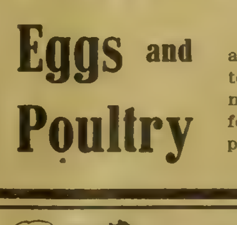

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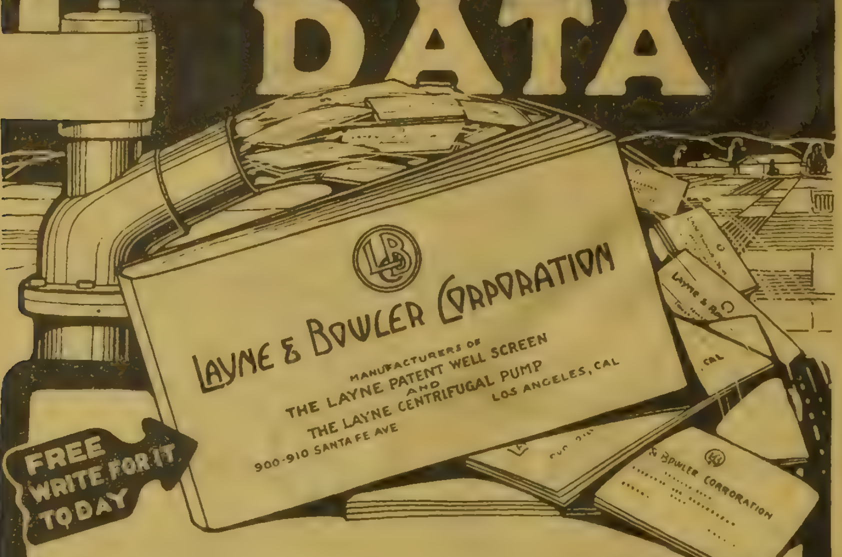
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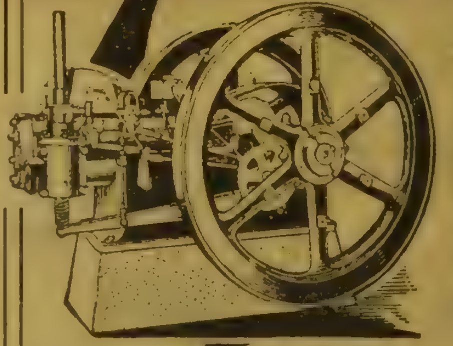

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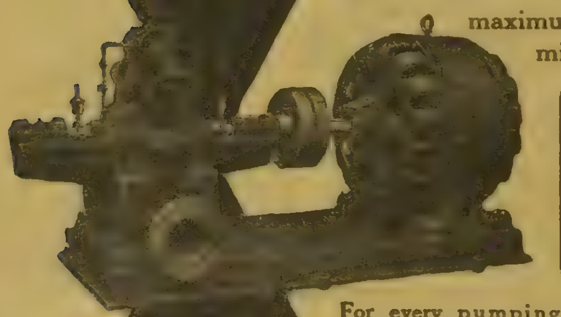

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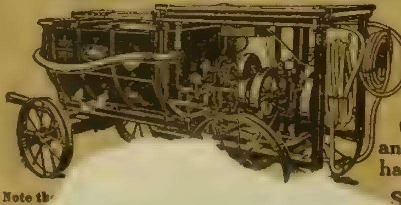

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